AMERICAN VETERINARY REVIEW.

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EDITORIAL.

THE ASSOCIATION OF FACULTIES OF THE VETERINARY COLLEGES OF NORTH AMERICA—A LAST WORD.—When last summer, through unforeseen private circumstances, I found myself obliged to be absent from the meeting of the United States Veterinary Medical Association, and from that of the Association of Faculties of the Veterinary Colleges of North America, I felt that it was my duty to present, through the chairman of the association, the protest which he so kindly took charge of—a friendly act—for which I thank him.

This protest I wrote as the result of long and careful consideration, and with the best intentions and motives. I addressed it to him, as I had his letters as chairman of the committee, and I had a number of copies printed for distribution, for no other object than to facilitate the understanding and discussion of the subject before the meeting, and by the association.

To have misconstrued the idea and the object of my doings in supposing that I was trying to break up the association, prevent its work, etc., is something that I cannot understand, as I cannot, even now, after repeated readings of the protest, find the slightest expression of such meaning. That I have insinuated that some honored gentlemen of our profession had assumed a title to which they had no claim, by representing themselves as official delegates of veterinary institutions, is an interpretation which does me great injustice, and which careful reading of the protest will reveal.

What I have asked might have been ignored—refused, as it were. It would have been better if the question had been considered in a cool manner, with careful examination of the object intended, rather than to have it treated as it has been. If such had been the case, I cannot yet, to-day, help thinking that it would have been better for all.

I have not given in my use of the words *legal* and *unconstitutional*, their strict meaning, but that which I believe is understood when applied in connection with the propriety of complying with the laws that regulate all constitutions of every well-organized body of men.

After all, my object was simply to ask the Association of Faculties to be so perfect in its organization that not the slightest flaw could be found in years to come. I had for the future of that association a perspective so large, and so great an idea of its influence and of its value, that I thought something was wanting, was deficient, and I took the first opportunity to cry "Stop"—as I did.

Have I made a mistake? If so, I am prepared to apologize, but yet the proofs of my error have not been produced.

The minutes of the meeting of the association will settle the question, and would have settled it long ago, had they been made public, or had I had an opportunity to see them.

The question resolves itself to this: If the minutes record that *official delegation instruments were presented by each and every delegate, and are placed on file with the archives of the association where they can be seen*, I have made an error, a great error, and, as I said, I shall apologize, and regret my mistake. If, on the contrary, such official credentials are not in existence, I cannot but repeat that which I have asked before.

A reconsideration of the work done could not have injured nor broken the vitality and strength of the association. On the contrary, it cannot help but strengthen it. Its work on behalf of veterinary education can be but more influential. Its prospective callings—in the watching of those steps which will elevate our profession—are so great, that, to us, too much care cannot be taken to preserve it and to carry it through a long life of usefulness.

And these were my motives for writing the protest; and the recent journalistic misconstructions and misrepresentations, born of a desire to self-lionize the writer, who, lulled by self-adulation into a feeling of censorship of the acts and utterances of the whole profession of veterinary medicine of America, cannot but be open to the suspicion of being malicious, and, as such, contemptible. And having made the above explanation to the profession at large, a few of whom may have been misled by the attacks made on me, I leave the whole matter (*once for all*), to the calm judgment of unprejudiced minds. A. L.

ANTITOXIN IN TETANUS.—We called the attention of our readers, in the last issue of the REVIEW, to the advantages that veterinarians could derive by the use of antitoxin in the treatment of tetanus, and if the results which have been recorded in medical journals could be obtained in veterinary, as it has in human medicine, it would be certain that a very valuable addition to our therapeuty would be obtained.

We had called upon some of our colleagues, who, we understood, had used antitoxin, and, though all did not answer our request, we have received from Dr. Jobson and from Dr. Lamkin, reports of most interesting value. These are not only *tests* of the value of antitoxin, they are proofs of the advantages that can be obtained; they show that it belongs to the veterinarians not to ignore this form of treatment; in fact, they are but the promoters of a positive indication that not only antitoxine cannot be ignored, but, on the contrary, ought to be used immediately—from the first indication of the disease, at the first symptoms. In point of fact, this is the opinion of Prof. E. Nocard, who, we believe, principally objects to consider antitoxin as curative in general practice, because it is generally too late when the veterinarian is called, the organism being so entirely saturated with the bacilli of the disease that no effect can be looked for from the antitoxin itself.

In relation to this subject of the treatment of tetanus with sero-therapy, we will publish later the results which were

obtained by a French veterinarian in using the serum of a horse affected with tetanus for the treatment of other tetanic patients, with wonderful results.

VETERINARY PRIZE.—In the January number of the REVIEW we were allowed to present our readers with the report of the Chairman of the Prize Committee, Dr. Tait Butler, which was read in the meeting at Des Moines, last September, in relation to the prize which has for some time been offered by the United States Veterinary Medical Association, and having courteously accepted additions to its value from the editors of the veterinary journals of this country.

The report was very interesting and presented some valuable, just and severe criticisms upon the whole subject; explained the reasons why no papers could reasonably be expected; related the circumstances by which some injustices have been (perhaps unwittingly) committed, and concluded by asking that said committee be discharged, and the subject of a prize from the association be dropped.

We are not aware of the action taken by the association in reference to the matter, but we hope that the conclusions of Dr. Butler were not accepted, but that, on the contrary, the national body has, in its wisdom, adopted measures to encourage the competition and keep up its offer of a prize for the best paper presented. As far as we are concerned we hope that the association will continue to allow us to add to the prize the offer that we have already made, and, should we not be permitted to do so, we will—and we do now—offer a special prize, of the value stated by us, for the best paper that will be sent to us on any subject connected with veterinary medicine, the selection of said paper to be made by a committee of three, chosen from the members of the profession in this country.

DR. O. SCHWARZKOPF.—We have received information to the effect that Dr. O. Schwarzkopf has resigned his position with the McKillip College, of Chicago, on account of personal difficulties. From a letter received relating to this serious event, we extract the following:

"I feel that this abrupt removal will reflect on Dr. Schwarzkopf, whom we—the faculty—have come to respect as a true, scientific gentleman, a man eminently qualified to guide such an institution. In justification of his meritorious work, I address you, as one of the recognized leaders of the veterinary profession in America, to show you that Dr. Schwarzkopf has won, and yet maintains, the most profound respect of all the members of the faculty, as well as the students of the college."

Dr. Schwarzkopf has a right to feel proud of such appreciation from his ex-colleagues.

PENNSYLVANIA STATE VETERINARIAN.—After a long delay, during which the veterinary societies of the State pluckily pursued the appointing power, Governor Hastings has annonced the appointment of Prof. Leonard Pearson, of the Veterinary Department of the University of Pennsylvania, and one of the editors of the *Veterinary Magazine*, to fill the position of State Veterinarian. This appointment is well merited by the special attainments of the recipient, and completes the State Veterinary Sanitary Board, enabling it to deal more thoroughly with contagious diseases of animals, and to better control the milk and meat industries to the end of better guarding the health of the people deriving sustenance therefrom. The salary of the position is twenty-five hundred dollars per year.

BUFFALO SELECTED.—The *Comitia Minora* of the United States Veterinary Medical Association has decided to hold the annual meeting for 1896 at Buffalo, which has never before been honored by the presence of the national body. Many other cities put forward most excellent claims for the convention, but Buffalo outvoted them and carried off the prize. Certainly there are many advantages in and around that city which will make a large meeting of veterinarians very interesting, and the *personnel* of the Buffalonians insures a hearty welcome to visitors from everywhere. The city is a vast centre of live stock interests, and the point is accesible from all quarters. We bespeak for the meeting of this year a large attendance and much interest.

ORIGINAL ARTICLES.

VETERINARY OPHTHALMOLOGY.

By J. A. COUTURE, V.S., Quebec.

Specially Written for the AMERICAN VETERINARY REVIEW.

ULCERATION OF THE CORNEA; FALL OF THE CRYSTALLINE LENS.

This disease is very common in dogs and men, and those veterinarians who have a little dog practice have often met it either on old subjects or as a complication of distemper. But, if I am not mistaken, the displacement of the crystalline lens and its falling out of the eye is a very rare occurrence in dogs, though it is not of uncommon occurrence in man.

In order to better understand the case it may be useful to expose in a few lines the causes, symptoms and termination of the disease.

Ulceration of the cornea is never of an inflammatory nature; on the contrary, it is the consequence of defective nutrition bringing a *passive processus*, called by some *degeneration*, but more properly described by Trasbot under the title of *necrobiosis*. This Alfort professor has so well described both these passive processes (*necrobiosis*), and the ulceration of the cornea, that the readers of the REVIEW will forgive me if I quote him largely in this article.

Necrobiosis is the term employed by Virchow to designate the *progressive mortification, followed by gradual destruction, without putrefaction, of anatomical elements situated in the midst of living tissue.* It differs from necrosis. Necrosis is characterized by gangrene of all the elements of the parts affected; necrobiosis is characterized by death and gradual disintegration of the affected part.

Necrobiosis occurs physiologically in secretion of sebaceous glands, secretion of mammary glands, some mucous secretions; it occurs pathologically in all *fatty degenerations and fatty infiltrations*, it occurs also in the disintegration and absorption of blood-clots when hæmorrhage has taken place in the tissues,

or when there is an obstruction to the capillary circulation. It occurs in what is called mucous infiltration, colloid infiltration, amyloid infiltration.

Ulceration of the cornea is the consequence of colloid necrobiosis of the membrane. It is caused by general debility; occurs specially in old dogs weakened by misery, diseases, old age; in young dogs as a result of long and protracted distemper or any other cause of general debility.

At the outset there is no sign whatever of irritation; the eye keeps open, the cornea is transparent except at a small spot in the centre generally, or near the centre, but not always, as is thought by the above named writer, and as my case will prove. The non-transparent part of the membrane appears as a small speck of a milky color and slightly bulging out. Later on the affected part softens, colloid degeneration takes place, it falls off and leaves in its place a small cavity, nearly circular, surrounded by a grayish, white zone. Vision is not affected yet.

The cavity grows larger, more or less rapidly, according to the conditions of existence, until half or two-thirds of the thickness of the cornea has been invaded. At this period the eye may not be painful and the eyesight not much impaired.

Then, should the causes continue to exist, and the ulceration not attended to properly, it keeps on growing larger and deeper until the membrane is perforated through; the membrane of Descemet shows itself into the opening in the shape of a small, round hernia. From this period inflammation sets in, affecting first the membrane of Descemet and the cornea afterward. In the mildest cases this inflammatory reaction may bring on cicatrization of the ulcer. In the worst cases the membrane of Descemet, being exposed, breaks; the aqueous humor flows out, and the inflammatory process invades the serous cavity and terminates in total loss of the eye. In other cases again, the ulceration is so large that the crsytalline lens, not being kept in place, falls out.

Here is a case of this kind: The patient is a very old dog—sixteen years old, deaf and almost blind, suffering for a long time from general debility, brought on by chronic gastro-en-

teritis, confinement in rather an obscure place, want of exercise and old age. I was called to him at the end of December last, and was informed that he was suffering from diarrhœa for many days. In making my clinical examination, I noticed that both eyes were sore, but not being called to attend to these organs I did not examine them carefully. Proper treatment for chronic gastro-enteritis was prescribed; the patient gradually got better and at the end of March I was informed by the owner that he was as well as he could be, considering his extreme old age.

The 11th of September last the owner called to get some more medicine for the dog. After a few minutes of conversation he took out of his portfolio a small package wrapped in paper, and showing a small, round, whitish object, said it fell out of the dog's eye a few weeks previously.

Surely it was the crystalline lens. It is quite easy to recount the case: My patient, weakened by disease and old age, etc., has had an ulceration of the cornea. Every circumstance being favorable to the progress of the disease, it finally caused perforation of the membrane and fall of the lens.

I saw the dog the next day and examined his eyes as well as I could without the aid of any instrument and with the diffused light. Opposite the superior line of the iris of the perforated eye, the cornea presents a projection the size of a pea, and which is formed of the membrane of Descemet forced out of the opening of the cornea by the new-formed tissues. The cornea is dull, greyish-white; though the eye is somewhat atrophied, it is more convex than usually. The other eye presents near its centre a cavity of about one-quarter each diameter, which has not yet perforated the cornea. Both eyes are suffering from purulent conjunctivitis. The patient is destroyed the next day with chloroform.

SPRATTS' DÓG BISCUITS.—We have received as a compliment from this well-known concern, a pamphlet, referring to the use of this mode of feeding for dogs, which well deserves reading. It is sent gratis to any applicant.

RABIES IN CATTLE.

THE SO-CALLED HYDROPHOBIA IN CATTLE.

By T. ZUCKER, Student at the A. V. C., with permission of A. T. Peters, D.V.M., University of Nebraska.

A Paper read before the Medical Association of the A. V. C.

During my sojourn in the West this summer I chanced to come across a very interesting disease affecting the bovine race. Not only was it interesting, but perhaps mysterious and baffling as to its correct diagnosis, as it presented symptoms almost identical with several other of the nervous affections; but I refer especially to that of rabies, it having been my good fortune to carry on a series of experiments with rabies in cattle, and several other of the domesticated animals, at the experiment station of Nebraska, under the supervision of Dr. Peters, thereby giving me an opportunity to see the simile of symptoms between the two affections.

This so-called hydrophobia was quite prevalent, from reports received from different sections of the State, and the symptoms given in these reports corresponded exactly with those of the two cases which came under my observation at the time. I will state here that the weather was exceptionally hot and dry at this period, and whether this will enlighten us as to the etiology or not, we will see later on.

I will demonstrate to you a case of true rabies in the cow; this will include a history of the dog that bit the animal, also the animal inoculated from said cow for the verification of diagnosis.

On April 12, 1895, a female bull-dog was brought to the station, suspected with being rabid, and was confined in an iron cage.

History.—She had one pup which she would not allow to suckle her, and would even snap it or any other animal that came in her way. Had bitten a cow, several horses, and many dogs, most of the latter were destroyed by the owners, and officers of the law.

The bitch after being confined began to act so ferocious,

biting and tearing at the bars, even going so far as to break her teeth, and lacerate the tongue and mouth in general. The cage not being safe with such severe attacks, we deemed it best to destroy her, which I did by placing some cyanide of potassium on a cornstalk, and allowed her to bite and lick it.

Post Mortem.—Her stomach contained nothing but a bunch of grass and hay with a few splinters of wood intermixed. She had only one kidney, which was of enormous size, all other organs apparently normal.

On April 13, 1895, we received the cow from Mr. G——, which this dog had bitten. Thoroughbred Jersey, two years old, fresh two weeks, well nourished, and giving a good supply of milk. Her calf was taken from her and she was placed in a pasture containing a thin crop of alfalfa.

History.—The owner saw this dog bite her on the nose, which was a very slight laceration and responded readily to simple local treatment. She acted rational up to April 16, 1895, when she refused food and drink. On April 17th, she acted strangely, following the man when he brought the horses to pasture; would rub up against him and lick his clothing. The cow previous to these symptoms was very docile. She used to suck herself, so we placed her under restrictions. We kept her in this pasture until Thursday, April 25, 1895, when she began to get vicious and made such a noise that we placed her in a special stone stall in the hospital.

From now on she began to get worse, having regular fits of spasms, eyes bulging, frequent attempts at urination, which would come in little squirts at first, constipation, but later the fæces were watery and flowed involuntarily. When she bellows she drops down suddenly, sometimes her head going under her body—thus we had to pull it from under her to prevent suffocation. She takes some food, chews it for a while and drops it out of her mouth again. Slobbers considerably while eating. If you approach her suddenly she becomes very much agitated. Her bellowing is unlike a cow in health, but prolonged and penetrating. Tried to take her temperature, but the rectum is continually filled with fæces, and then she falls so often it isn't safe to be with her. Pupils

well dilated, eyes amaurotic, ears always on the alert to catch a sound, if she hears a dog she generally has a bellowing fit.

April 26th, she is very violent, having these awful spasms every few minutes, gives a few shrill bellows then drops, powerless, eyes almost forced out of their sockets. She makes forced attempts to drink, running her nose deep into the pail, making that sound as if swallowing, but upon examination the quantity of water is not diminished. After these unsuccessful attempts she upsets the bucket. When attempting to eat she would generally take her bedding, roll it around in her mouth, with a profuse flow of saliva. When suddenly approaching her she would draw back, then make a lunge and drop in a spasm, and if you would come up behind her she would kick aimlessly at you. She will lick anything you place before her, will also pick up foreign substances and chew them.

April 27th, very much weaker, her spasms last longer and she is less capable of rising after she drops down.

April 28th, dropped at 5 A. M.; unable to drink, although she makes great efforts to do so; she raises her head with difficulty, respiration difficult, eyes glaring, salivation increased, very emaciated, bellowing less, and more labored, unconscious to the surroundings.

April 29th, cow very much debilitated, was given feed at 6 A. M., but went into severe paroxysms in attempting to eat, dyspnœa well marked, unable to rise, in fact was down for two days. Death took place on the evening of this date—thus she lived without food for seven days.

Post Mortem.—No tympanitis, slight peritonitis; the rumen and reticulum were filled with grass and straw in a putrefied condition; the mucosa very black, omasum as hard as a rock, was thoroughly impacted; abomasum contained small quantity of food in partially digested condition. Liver very hard and brittle to touch, gall bladder greatly distended, bile being of a thick stringy consistency; spleen about normal; kidneys apparently normal; bladder greatly distended with a light colored urine; lungs healthy, except a slight congestion from lying down. The blood in general was very dark and coagulated quite firmly. The larynx slightly congested, prob-

ably from bellowing, and at the isthmus of fauces there was a cud of straw which she was unable to swallow on account of paralysis. The pia-mater was highly congested in some parts; the dura-mater and arachnoid apparently normal. Quite a flow of fluid from the ventricles upon section, although I could not consider it more than normal. The brain tissue proper was soft and flabby, the right lobe of the cerebrum anteriorly was very much atrophied.

I received word through responsible parties that one of the horses bitten had also gone rabid, and was destroyed.

Now, to further prove the correctness of our diagnosis we made an inoculation test. Made a cold infusion of a portion of the medulla and cervical portion of cord, and two c.c. of this was injected in the axillary region subcutaneously of a healthy dog. Suffice it to say he died from a typical case of rabies thirty days after injection.

Now that I have demonstrated an indisputable case of rabies, it is plainly seen that the word hydrophobia, which means dread of water, is misleading and erroneous, as it reveals nothing to us regarding the true symptoms of rabies, for contrary conditions are noted in affected animals. They make forced efforts to drink, but on account of the paralysis of the pharynx and œsophagus they are disappointed in their attempts, thus they become frenzied and annihilate the bucket to get it out of their sight, so as not to be harassed by its presence.

Let us continue by the discussion of two of those mysterious cases.

August 26th, 1895, was called ten miles out of town to see a cow which the farmer said had hydrophobia. The cow was some distance from the house, in a pasture, through which ran a small brook, which depended on the rain for its supply. She was tied to a tree.

History. — Half Jersey, about five years old (no calf); first began to look sick on Saturday, August 24th, 1895; in fact he milked her this morning; in the evening she was absolutely dry, and was acting strangely, running at the heifer, and that same day Mr. H. and neighbor went down to catch her, and she made them take refuge in a tree.

Observation: When I saw her she was in poor condition, standing as if gazing at some distant object; but she suddenly awoke, as it were, and made a lunge at us. I placed a bucket of water in front of her, but it made her rave, and she threw it twenty feet from her; gave her a second pail, and she repeated the act.

Would pick up foreign substances and chew them. Salivation well marked, spasmodic squirts of urine in small quantity, involuntary flow of watery fæces, œstrum well marked by mucus discharge, pupils dilated, eyes bulging, ears pointed as if listening, she would have spasms and fall down, would buck and tear the ground where the water spilled.

Very emaciated, perfectly dry, would give those piercing bellows, upon approach of a dog she would go frantic. There was a constant shivering of the muscles of the head and neck, also anterior extremities and an amaurotic condition of the eyes, which would give no reaction when touched with the finger, would also kick out aimlessly.

There was no history of mad dog, but as the cow is in the pasture permanently throughout the summer, and is seen only when milked, this statement cannot be verified. She received other food beside the pasture grass.

I shot her on the spot, and made but a very superficial microscopical examination, which was negative as regards lesions.

The blood was dark, but upon striking the air readily oxidized, and was a light arterial color and foamy.

In going to the next case I will simply state that she was a thoroughbred Jersey, about three years old (no calf), in good condition, giving good supply of milk; the history and symptoms were almost identical with the above case, so there is no need of repeating same. No mad dog in this case.

The only difference was, she was loose in a yard, and had broken her horns, and cut and bruised her face and body; she also acted the same towards a bucket of water. Blood in exactly the same condition.

THE TRANSMISSION OF DISEASE.

By Dr. A. H. Baker, Chicago, Ill.

A Paper read before the Illinois State Veterinary Medical Association.

The consideration of this subject launches us into the complex and hypothetical field of heredity, that to discuss in all its features would take too much of the time of a gathering of busy veterinarians who seem in many cases to be loth to devote more than a few hours twice a year to the discussion of topics of interest to the profession; so, after briefly stating the more generally accepted modern theories of heredity, I will present for your consideration a few points on the transmission of disease from parent to offspring.

The fundamental law of heredity is that like begets like, or at least tends to beget like; but, using the language of believers in evolution, the doctrine of which is now very generally accepted by the scientific world, many deviations and exceptions occur, and may be attributed to the influences of environment, whether they can be discerned or not, and through these new types may be formed, old ones lost, desirable peculiarities perpetuated and improved, and, on the other hand, weaknesses amounting in many cases to actual disease exaggerated by proper or improper mating of breeding-stock.

The natural tendency in nature is toward an equilibrium, an evening up of advantages and disadvantages; but if the mating occurs between animals possessing the same strong peculiarity, the offspring will inherit that peculiarity in an exaggerated degree. If the mating occurs with one in which that peculiarity is wanting it will be diminished one-half in the offspring, and if kept up through several generations it will become obliterated.

The most common peculiarities that we see transmitted are anatomical structure and outline, size, color, intelligence, disposition, appetite, speed, strength and endurance. For illustrations of the transmission of these peculiarities I will refer you to the constant development of the sexual organs, the anatomical outlines of the thoroughbred and broncho, the

size of the draft horse and Shetland pony, the constant color and markings of the Hereford cattle, the intelligence of some breeds as compared to the stupidity of others, the docility of some families as compared to the irritability and viciousness, amount in some to actual ferocity, of others. Gluttony and daintiness are family characteristics; strength, endurance and speed are well known hereditary propensities; speed in particular is one of the best illustrations of the perpetuation and exaggeration of a family trait by judicious mating we have.

The American trotter has become a distinct breed of horses by long-continued judicious matings, and by careful education of the naturally acquired gifts. The healthy embryo develops into a normal fœtus and after birth grows up to be a strong specimen of the type, but we believe that many slight variations in the embryonal protoplasmic structure occur that prove later in life to be the origin of many diseases. They may require exciting causes to make them develop, but the seeds of them were in the ovum from the time of its impregnation. This hypothesis enables us to account for many diseases otherwise obscure in their origin, and the difference in receptivity of infectious diseases in different families and individuals. Some breeds take them in a most virulent form, while others enjoy an almost natural immunity.

All variations from the normal type are equally as transmissible as the perfect ones, but variations developing after birth are far less so than the congenital ones. Those existing in the adult, due to environment, are transmissible, but far less so than inherited ones. The theory of the embryonal origin of disease was practically applied to tumors by Cohneim, especially the cancers and the terratomata, and his views are quite generally accepted to-day.

The following diseases may be mentioned as being due in many, if not most, cases to heredity, the seeds of them in the form of variations from the normal protoplasmic structure exist, and only require some stimulus to act as the exciting cause to produce them. The application of this exciting cause will produce the disease if the predisposition exist, but will not produce it if it does not exist. It may be delayed

indefinitely, even to old age, or by atonism (interrupted heredity), it may skip over one or more generations to reappear in subsequent ones, and in some cases, through the introduction of new, strong blood, the predisposition may die out.

Tuberculosis; rheumatism; some of the neuroses—epilepsy, the dummy, chorea, heaves, asthma, roaring and locomotor ataxia; cancer; ossific diathesis, as seen in bone spavin, ringbone and sidebone; laminitis; naviculathritis; hæmophilia (the hæmorrhagic diathesis); the bursal enlargements—thoroughpin, bog spavin and windgalls, curb, obscure bone diseases—rachitis and interstitial absorption; anatomical malformations, as tailless dogs and cats, imperforate anus and ear, defective hearing and sight.

The practical lesson to be learned from this subject is to discourage the use of unsound animals in the stud, especially stallions, for they undoubtedly transmit diseases oftener than mares; but we should not belittle the value of the pedigree on the maternal side. We should discourage the permission of unsound animals to compete for prizes at stock shows.

REPORT OF THE COMMITTEE ON DISEASE.

By M. R. Trumbower, Chairman.

Read before the United States Veterinary Medical Association.

(*Continued from page* 622).

MICHIGAN.

H. H. Hinds, President of the Live Stock Sanitary Commission of Stanton, writes:

"We can make no estimate as to percentage of tuberculous cattle in this State. We have tested a good many cattle with tuberculin since January 1st last, which have resulted in about twenty reactions, and a post mortem in each case disclosed the lesions of tuberculosis."

From the 5th Biennial Report of Michigan, I quote the following:

"*Glanders.*—That glanders and farcy will continue to exist among the horses of the State for an indefinite period in

the future is probably true; but it is equally true that this commission has been able to largely drive these diseases from the agricultural districts of the State to the new portions of our rural districts and the slum stables of our towns and cities. When the commission commenced its attack on this disease it was found to exist on many fine farms in the older or southern portions of the State, and in liveries and private stables within the cities and villages. Not a year then passed but that cases of death from this loathsome disease among the human family were called to our attention. Now the situation is entirely changed. Whole congressional districts seem to be exempt from it. The cases are simple and isolated. Now we find less cases in a year than we formerly found in a school district, village or livery stable. So far as we are informed, no human being within this State has died from this incurable malady during the last two years. Our plan of dealing with all horses pronounced affected with glanders by competent authority, is immediate destruction. The previous condition, record, value or ownership of the animal cuts no figure. Immediate destruction is inevitable. During 1893–94 forty-seven animals were condemned for being affected with glanders.

"*Actinomycosis.*—The disease appears to be in some manner communicable, but we are unable to exactly determine how. We have observed experiments where it appeared impossible to communicate it to other cattle, either by association or inoculation. In fact, in all the cases in our observation, in attempts to artificially communicate it, the experiments have produced negative results. We also have observed that a large percentage of cases, when handled in the early stages, yield to treatment both with the knife and by prescriptions. Also we have noted many recoveries without treatment.

"*Hog Cholera and Swine Plague.*—There has been a large number of outbreaks of what is termed 'hog cholera' in different sections of the State during the past two years, and farmers have sustained large losses from the disease, amounting in the aggregate to many thousand dollars. The State has also sustained a heavy loss. The disease broke out in a herd of the Eastern Michigan Asylum in August, 1894, and

out of 174 animals, 102 died. But few of the outbreaks in the State have been reported to the Commission, and but little notice taken of the destructive contagion by local boards of health; hence, where the disease has once started in a locality, its spread has been rapid and the losses correspondingly large."

MINNESOTA.

Dr. M. H. Reynolds, of St. Anthony's Park, a member of this committee, will present a special report on "Improved Medication."

MISSOURI.

Dr. John S. Meyer, of St. Joseph, submits the following report:

"We have had a very heavy outbreak of hog cholera and swine plague in Northwest Missouri for the last three months. Also one very violent outbreak of anthrax in swine the first of July, 1895. These are the only outbreaks I have had my attention called to of contagious diseases. We have some actinomycosis, tuberculosis and glanders here, but nothing of importance. In the treatment of swine plague and hog cholera, U. S. Swine Plague and Hog Cholera (Bulletin No. 24) Treatment was used. Results not very satisfactory."

I take pleasure in introducing a very interesting report from Dr. Junius H. Wattles, of Kansas City. I have many reports of this type of disease from various veterinarians in several States, but this being so concise in description, I will choose it for the purpose of covering them all:

"Kansas City was visited by an endemic, beginning about the middle of March this year, and lasting until the latter part of May, affecting horses of all breeds and ages, of a catarrhal nature, and rarely fatal. Not less than twenty-five per cent. of all the horses in the city were affected.

"In stables containing fifty horses, five, ten, or any number might be affected, either singly or all at one time—usually one or two new cases occurring each day, until the disease had run through the stable. The relative positions of the animals in the stables made no difference as to the order of their being attacked. One attack seemed to furnish immunity from a second. The disease appeared to be self-limiting, usually

lasting in those that I treated from four to ten days, convalescence lasting an additional week.

"Usually the first symptoms noticed would be that of profuse lachrymation, eyelids œdematous, loss of appetite, listlessness, head hanging low, recumbent when in stable, with general debility.

"On examination, the temperature ranged from 103 to 106°; respiration and pulse increased accordingly, with nothing remarkable about them. Auscultation showed no change in the lung structure that would show them to be especially involved. The mucous membranes were all œdematous, and the conjunctiva especially so, having the appearance of gelatine and almost transparent, showing the liver to be implicated in all cases; there was a slight cough in those cases that partook of the catarrhal form, in which the larynx was affected, as well as the upper air passages, with a very slight discharge from the nostrils. This condition I usually considered to be one of the complications.

"The complications met with were such as may be expected in any debilitating disease, viz., œdema of the extremities, purpura, and general prostration. One case that was brought to my office, and that I had ordered to the stable, was placed in a small building that had been used for a winter hen-house, the stall being about four feet wide and twelve long, with the entire south side of glass, allowing the sun to pour its concentrated rays upon the poor animal, producing a very marked case of cerebritis. In animals that were shipped for sale, to this market, that were already suffering from our acclimation fever, the disease was most severe, still the loss of life was very small when the large number of animals affected is taken into consideration.

"As to specific methods of treatment, I have none, and treated all of the cases in the manner that the existing symptoms demanded. Ext. belladonnæ fl.; tct. aconiti; ext. veratrum vir. fl.; ext. bryonia alb. fo.; potassii acetas; and liquor arsenicalis, were all used as they were in my mind indicated.

"My diagnosis: Enzootic cellulitis; specific, contagious, and infectious."

MONTANA.

Dr. W. L. Williams, of Bozeman, presents the following interesting contribution:

"I have had the privilege of observing two unusual diseases so far as our English veterinary literature is known. During the present year my attention has been called to an outbreak of a disease in sheep described by Prof. V. Babes, bucraest ascarcehe, and by Prof. Dr. Bonome, of Padua, as parasitic ictero-haematuria, occurring in the Deer Lodge Valley, where in a territory ten or twelve miles wide by twenty-one or twenty-five miles long there has been for five years an average annual loss of nearly two thousand sheep from this cause. I have not seen it elsewhere in the State, nor do I know of its occurrence in other parts of the United States, although I suspect it is common in some adjoining States, without recognition. I have also observed a wide prevalence of the cytodites nudus parasite of fowls, which has caused serious losses in this [Gallatin] valley among chickens and turkeys. I am not acquainted with poultry literature, and our literature deals so sparsely with pathology of birds that I have little idea of how common the affection may be, but, so far as I know, it has not been reported heretofore in America."

NEW HAMPSHIRE.

The Cattle Commissioners' Report, January 1st, 1894, states that during 1893, one hundred and fifteen cattle have been condemned for tuberculosis in two hundred and twenty-one stables, and nineteen horses were destroyed for being affected with glanders.

NEW JERSEY.

Mr. Franklin Dye, the Secretary of the Commission on Tuberculosis in Animals, writes as follows:

"Your first question as to the prevalence of infectious and contagious diseases in our state, New Jersey, in common with other States, has a sprinkling of those diseases. Nothing, however, seems to be unusually prevalent this year over past years unless it may be the increase of anthrax in one county recently, which, no doubt, will soon be subjugated. There have been a number of cases of glanders as in other years, but

no great per cent. Tuberculosis exists, but is not general. Certain stables, owing to the manner of keeping cattle, and to the neglect of eradicating the disease in the past two or three years, have in some cases become quite serious. Such, however, are being brought to the notice of our Tuberculosis Commission. Cases responding to the tuberculin test are destroyed and the stables put in better condition for future work. I would not venture to state any per cent. On the whole I may say greater vigilance is being exercised by our State authorities, having these matters in charge, and the more willing and earnest co-operation on the part of the stock owners with the authorities for the purpose of controlling the disease, and of placing the dairy, and dairy product especially, in a healthy and healthful condition. I would be glad to give you definite statistics, but it is impossible for me to do so."

NEW YORK.

Dr. John Faust, of Poughkeepsie, a member of this Committee, forwarded the following communication:

NEW YORK STATE BOARD OF HEALTH,
Albany, July 25, 1895.

To Mr. John Faust, V.S., Poughkeepsie, N. Y.

DEAR SIR:—In reply to your communication of the 24th inst. requesting information as to the number of horses killed in this State in one year on account of glanders, you are informed that the records of this department from September 23d, 1894, to date, show that seventy-seven horses have been certified to the comptroller as having been destroyed by order of local boards of health on account of glanders.

Very respectfully, your obedient servant,

BAXTER T. SMELZER, *Sec.*

"There is at present an epidemic of glanders in Long Island City. The State of New York pays $50.00 per horse.

JOHN FAUST."

Dr. Faust will present a special report on anthrax, and preventive inoculations.

OHIO.

Dr. D. H. Kinsman, of the Live Stock Sanitary Board, addressed to me the following letter:

"Glanders, hog cholera, and a few cases of pneumonia among cattle have been reported. A quite extensive outbreak of hydrophobia prevailed among hogs, dogs, and cattle during the spring and early summer. Have no information on tuberculosis."

Dr. Wm. Gribble, of Washington Court House, writes:

"I cannof say that we have been over-burdened with any disease the past year. Influenza has been especially prevalent, but this locality's bugbear is tetanus, of which we have an abnormal share; why, we could never ascertain. In this letter I might state that we have experimented in destroying horses, and find that 48 calibre bullets, with brain running down over face, did not cause death in less than eight to twelve minutes. Enormous doses of morphia allows them to live quite a long time. Also aconite, digitalis, etc.; but a fifteen grain saturated solution of sulphate of strychnia (using boiling water), injected directly into the trachea, will cause death in from one to four minutes, according to the size and strength of the horse."

I will now introduce a letter from a veterinarian who has grown old in the love of his profession; one who has always been up to all the advancement of the science, and whose concise diction all of the older members will readily recognize —Dr. John C. Meyer, Sr., of Cincinnati:

"Yours of the 10th ult-, came to hand in due time. After reading its contents, I observed that the questions are neither many, nor difficult to answer, and would be pleased to supply you with some important information, but such is not at hand from the fact that I retired from business two years ago owing to some defectiveness in my nervous and digestive functions, though not to such a degree as to make me lose all interest in our professional welfare. Consequently I take the liberty to make a few remarks relating to it.

"So far as I remember there has been no disease particularly prevalent within the last two or three years except hæmoglobinuria, which I have often heard mentioned by my son and his assistant, Dr. Tritschler. Glanders likewise received some attention. Pulmonary complaints demanded less professional

help. Indeed the expression, 'dull times,' which seemed almost proverbial in every branch of business, invaded the veterinary branch as well. The answer to the question, 'How is the stock?' invariably was, "Better than ever.' Even Texas fever was not reported any more, either officially or privately. However, since the concerted action of the Live Stock Commission and veterinarians the ordinances pertaining to it have ceased to be a dead letter, at least in this district. Our stockyards are now exempt from such cattle, where they were usually sent without hindrance, distributing their virus, causing alarm, and heavy loss, which was a grave misdemeanor of the past.

"I was somewhat disgusted with the Hamburg muddle last year, and could not believe it until the *Berliner Thierarztliche Wochenschrift* published the account. The *Cincinnati Commercial Gazette* of the 19th, 20th, and 21st of July, reported an outbreak and spreading of the same epizootic in Louisville, Ky., and on August 7th, the same paper states that the mortality among cattle from the fever in middle Tennessee is alarming. If such reports gain currency, what will become of the United States Sanitary Administration?

"When I commenced practicing in Cincinnati this pestilence caused consternation among the dairy people; their loss was immense, and they were timorous about replacing their stock before the cold weather set in. Their calamity urged me to become acquainted with the characteristics of this plague, wherefore I made a number of post mortem examinations.

"Unimportant as it may seem to make mention of the fever remedy, acetanilid or antifebrin, officially recommended as reducing temperature and circulation, particularly in infectious morbidity, I now and then find deprecatory remarks about it in veterinary journals, which are apt to discourage some from giving it a fair trial, thus depriving them of a reliable expedient for shortening undue suffering. Undoubtedly, unfavorable results are due to avoidable causes. Its administraion has never disappointed me, and I have used it almost exclusively since 1883 (the only other antifebrile agent

I once in a while have taken recourse to was quinine), giving it in ½ dram doses once per day to a medium-sized, full-grown horse, in ball shape, electuary, or rectal injection. In solution (drench form), it penetrates quicker, and the stomach, on account of defective appetite, being more or less empty, the strength of the dose is not so readily determined, therefore, I never give it in that way. Toxical symptoms I have never met with. Nilitists tell us that their patients recover without it or any other medical interference, which I do not altogether dispute, but from experience I know that a proper dose of this medicament will very often relieve the sufferings of an animal for eight to ten hours in the twenty-four. It may even render it so much better that a recovery is more certain than his chance will be if the high temperature is permitted to have full sway.

"A short time before retiring from practice, I had a case of purpura hæmorrhagica; head, limbs, and abdomen tumefied; rusty discharge from the nose; petechia, etc., were the most conspicuous signs. As the patient, a team horse, was near my place, I concluded to make an attempt with bisulphate of quinia, to see what effect this remedy would have injected intravenous, which I introduced into the jugular by means of a two dram hypodermic syringe, three times on the first day, and twice on each the second, third and fourth days. By this time the swelling had so much reduced and appetite increased that the horse could be sent to pasture, where the ulceration in skin of pastern and hock joints soon healed, and the horse made a good recovery. It was my intention to repeat this experiment as soon as a suitable subject presented itself, in order to find out whether the good result, as I estimated it, is attributable to treatment, or whether it is mere accident; but opportunity would not favor me. So I am left in doubt in one respect. Am satisfied, however, that horses will tolerate ingredients in their circulation which are not exactly homogenous.

"Probably you remember a translation in the REVIEW and *Journal*, of a report by Dr. Jelkman, wherein he treated 100 horses with a scalma-like epizootic of laryngo-pharyngitis,

with morphia hydrochloric 2.0, and ag. amydulæ. amar. 200.0; ten grams of which solution were injected into the larynx of each patient every morning and evening. All my patients similarly affected were treated by this method as regularly as possible, considering they were not in such close proximity as Jelkman's, which were all in one stable and received immediate attention. And I believe I have acquired evidence enough to justify my saying that throat diseases are more readily controlled by this than any other way. A similar and equally valuable modus operandi as the preceding is the tracheal injection. Prof. Dieckerhoff reports excellent results with injections of Lugol's solution into the trachea in morbus maculosus (blut-flecken-krankheit).

"Though not new, I have not noticed any accounts either for or against this procedure lately. It is a much safer method than drenching, which, in cases of difficult deglutition, as, for instance, in parturient apoplexy which started the peristalsis, attended with moaning, indicating pain, but did not affect a cure.

"Now that the discoveries of micro-organisms, tuberculin, mallein, etc., have revolutionized the veterinary medical world, I shall not be surprised that some day one or the other of our great scientists may find himself the discoverer of specific antidotes against bacilli and their mischievous results."

(*To be continued.*)

CONTRIBUTION TO THE STUDY OF SWINE PLAGUE, HOG CHOLERA AND PNEUMOENTERITIS OF SWINE.

By Dr. W. Silberschmidt.

(*Continued from page* 626.)

TRIALS BY SEROTHERAPY.

A. Swine Plague.—I have experimented upon rabbits and guinea-pigs with blood taken aseptically from the carotid or the femoral arteries of vaccinated animals, and tested against *swine plague* or against infectious pneumoenteritis. The blood, collected in a sterilized tube, was placed for several days in a

cool place until complete separation of the clots and the serum drawn with the pipette. I will relate some of my experiments:

No. 299.—Receives 5 cc. of serum from rabbit No. 101 in the vein of the ear. Test after 18 hours; the rabbit dies in the night of the eighth day. At post mortem are found, besides the very marked œdema of the ear, a small spleen, high congestion with small suppurative centers through both lungs. Culture of the blood gives a pure result. The witness receives 5 cc. of serum of a fresh rabbit, he dies about 22 hours after the testing injection, without other lesions than a small abscess at the point of inoculation. He lives about seven days longer.

No. 246.—Injection of 4.5 cc. of the serum of rabbit No. 198. Test 30 hours with $\frac{1}{20}$ cc. of culture of *swine plague* in bouillon. Large œdema of the ear with abscess which ulcerates spontaneously. Dead in five days. Post mortem shows that the abscess has extended under the skin of the head; the spleen is enlarged, few microbes in the blood. The witness dies in 20 hours after four days longer life.

No. 247.—Injection of 3 cc. of the serum of rabbit No. 178. Tested after 25 hours. Dead in five and one-half days. Œdema is very large, and abscess extends under the skin as far as in front of the sternum. The witness dies in 20 hours after four and a half days longer life.

No. 280.—Three injections of altogether 11.55 cc. of the serum of rabbit No. 198, the third injection of 6 cc. is made eight days after the first two. The test is applied two days after the last inoculation; the witness dies in less than 12 hours, a rabbit not well vaccinated in 30 hours. Our rabbit has at the point of injection a slight hyperaemia which disappears after four days. A second test, made twelve days after the first, kills the rabbit in about 30 hours.

No. 253.—Two injections, made 5 minutes apart, one intravenous of 4.5 cc., the other subcutaneous of 3 cc. of the serum of rabbit No. 198; test after 2 hours. A second rabbit submitted to the same experiment after having received another serum dies about seven days after. The rabbit showing no morbid symptoms, receives five days after the first testing inoculation $\frac{1}{20}$ cc. of virulent culture of *swine plague*, and dies in the night of the seventh day.

No. 276.—Subcutaneous injection of 11 cc. of the blood of a dog vaccinated against *swine plague*. Test after about 19 hours. The next day, temperature 41°, large tumefaction of the ear, intense diarrhœa, death in 51 hours. The witness dies in less than 18 hours. Longer length of life one and a half days.

No. 252.—Subcutaneous injection of 10 cc. of the blood of a dog vaccinated against *swine plague;* the next day another injection of 6 cc. of the same blood. Test after several hours; the œdema of the ear, very large on the second day of the testing examination, diminishes and reincreases again towards the sixth day; the rabbit dies in seven and a half days. Marked postponement of death. Small quantities of the blood of this vaccinated blood retarded the death but only a few hours.

No. 291.—Two subcutaneous injections of 6.5 cc. and 3.5 cc. of the blood of dog vaccinated against *swine plague*, and made twenty-three days apart. Test the fifth day after the second injection; the rabbit dies about in the same time as the witness, in 12 to 16 hours.

No. 331.—Injection of 3 cc. of the serum of rabbit No. 107. Test after 24 hours; immediately after, new injection of ¾ cc. of serum; these injections of serum are repeated the following days: the next day, large œdema of the ear, two injections of 1 cc. each; the two following days, one injection of 1 cc.; the fourth day the œdema increasing. I make two injections of 1½ cc. each; the fifth day I inject 1.25 cc., the rabbit dies during the night, or five and a half days after the test; the witness died in less than 16 hours. Then longer life of five days. At post mortem, alongside the enormous œdema of the left ear, there is purulent pleurisy, unilateral, on the left side with pericarditis.

No. 333.—4-VI, 1k-750, at 55 minutes after 3 o'clock, injection of virulent culture of *swine plague* killing witness in 16 hours. At quarter past 7, 3 hours and one-half later, the rabbit receives 4.5 cc. of serum of rabbit No. 107. The next day the temperature is 39° 4 in the morning, 41° 1 at 4 o'clock P.M.; two injections of 2 and of 1 cc. of serum. 6-VI, 1k-665; ear œdematous; 49° at 10 o'clock A. M., injection of 1 cc. of serum; at 4 o'clock P. M., 42°. Injection of 2¼ cc. 7-VI, 9 o'clock, 39° 9, 1k-550. Injection of 1½ cc. of serum, 7:30 P. M., 41° 5; injection of ½ cc. of serum. 8-VI, 1k-550; 9 o'clock 39° 7. Injection of 1.75 cc. of serum and second injection of the same dose at 5 o'clock P. M. The rabbit dies during the night—he resisted four days longer than the witness.

At the post mortem, lesions are identical with those of No. 331. Ear much œdematous and ulcerated, purulent pleurisy with pericarditis, part of the lung hepatized. Microbes in the blood and in the pus. Pure cultures.

No. 335.—8-VI, 1k-665; at 9 P. M., injection of $\frac{1}{20}$ of virulent culture of *swine plague*, rectal temperature was 39° before the inoculation. The witness dies during the night.

At quarter to 3, 3¾ hours after the testing injection, the thermometer indicates 40° 2; injection of 7.5 cc. of the serum of rabbit No. 198. 9-VI, 40°; injection of 2 cc. at 10 A. M. 10-IV, 41° 4 at 10 A. M., injection of 2.5 cc. of serum. 11-VI, 1k-770. The œdema increases, 40° 3. Injection of 3 cc. of serum. The 12-VI, the ear being very much tumefied, I make some small scarifications, washing with sublimate solution and painting with tincture of iodine, I inject besides 3 cc. of serum in the morning and 2 cc. in the evening. 13-VI, 40° 3. Weight 1k-625. Injection of 2.75 cc. in the morning, and 2 cc. in the evening. The 14-VI in the morning, the rabbit is lying down on its side, and notwithstanding a last injection of 3.5 cc, of serum, dies towards 11 o'clock A. M., five days and a half longer life.

Autopsy—Abscesses disseminated through the lungs with circumscribed heaptization in both cases. The blood gives a pure culture, but not very abundant.

I succeeded only in two cases to protect rabbits against *swine plague* with preventive injections of the serum of vaccinated rabbits; in both cases a second test has killed the animal, which proves that immunity thus conferred does not last.

In my numerous experiments, the rabbits have presented, after preventive injection of 2 cc. and more of the serum of vaccinated animals, a marked and constant extent of life compared to the witnesses, which was never observed in fresh

rabbits. To protect animals to the last, there would have been required a more active serum. Nevertheless, it is permitted to affirm, from the facts mentioned and numerous analogous results, that the serum of vaccinated animals, injected in new rabbits, has a preventive, vaccinating and therapeutic action. This action is much more manifest after the intravenous injection than after the subcutaneous inoculation. A fact to notice, the dog which had resisted several times to inoculations of 2.5 cc. of virulent blood and which consequently was much more vaccinated than the rabbits, has furnished a very little active serum; which is due probably because he had received a quantity of toxine relatively much less to its weight. I believe I can endorse the opinion expressed first by Mr. Metchnikoff, that the preventive power of the serum of vaccinated animals does not depend on the state of immunization of the animal, but is in direct proportion to the quantity of toxine injected.

The therapeutic action of the serum is about as great as its preventive, the last two mentioned experiments prove it; the rabbits treated several hours after the inoculation of the virus, at a moment where they already exhibited a noticeable elevation of temperature, have resisted as long as those which have received the preventive serum before the injection of the virus. It can be hoped that by increasing the dose of the toxine to inject, one will succeed, by the injection of the serum, not only to protect, but also to cure animals already diseased.

On different occasions I have received small doses of culture with the serum of vaccinated animals; this mixture cultivated, has, after a few minutes, a few hours or a few days, regularly given a culture, and its inoculation to various animals has brought on death as rapidly as the injection of culture without serum.

Conclusions.—1st. The serum of animals vaccinated against *swine plague* has no bactericide action *in vitro*, and injected with virus does not postpone the death of the rabbit.

2d. Two rabbits have resisted an injection of virulent culture of *swine plague* which has killed the witnesses, after the

previous inoculation of the serum of vaccinated animals. In a great number of other cases the resistance has been of a limited duration and the animals have died after a longer time than the witnesses, time varying from some hours to six days. This length of time depends on the activity of the serum, the dose injected, the mode of inoculation (in the vein or under the skin), and the space of time between the injection of the serum and that of the virus. In my experiments the injection of serum has no longer a preventive action, if the testing experiment was made six days after the first; the optimum seems to be in the first twenty-four hours, but it is better to wait several hours between the two injections.

3d. The injection of serum made after that of the virus, when there is already an elevation of temperature, postpones death about in the same measure as the preventive injection. In increasing the activity of the serum, from these results, one could obtain a preventive and an efficacious therapeutic effect.

4th. Animals having resisted a test of virulent culture, thanks to the preventive serum, have not by this fact obtained a lasting immunity; a second testing injection has produced death with a small extent of life against that of the witnesses.

5th. Injections of small doses of serum, repeated after the testing injection, have seemed to me to postpone the death, but not in proportion to the total of the quantity injected.

B. *Pneumoenteritis.*—No more than for *swine plague*, I have not here observed bactericide power *in vitro;* microbes of pneumoenteritis, left for several days in contact with the serum of vaccinated animals, have always given cultures; I have not examined if the virulency had been attenuated.

By opposition, the preventive action has been more accused than for *swine plague*, though it is with a microbe much less virulent, and that the serum that I used had been obtained from a rabbit vaccinated with a quantity of toxine relatively weak, which makes me suspect that there is yet another factor acting.

The two rabbits which received injections of this serum survived to the test, namely:

No. 326.—30–V, 1k-800; injection of 1 cc. of the serum of rabbit No. 238, vaccinated against pneumoenteritis. The next day injection of $\frac{3}{10}$ cc. of virulent blood. The witness dies inside of 18 hours.

1–VI, 39° 6; tumefaction of the ear. 2–VI, 40° 7 in the morning, 40° 5 at 7 P.M.; two injections of 2 cc. 3–VI, 1k-810; 39° 3 at 2 P.M.; injection of 1 cc. of serum. 4–VI, 1k-700; at one o'clock 39° 5; fourth injection of $\frac{1}{5}$ cc. of serum. The abscess of the ear began to soften; the 9–VI, the skin covering the abscess gets loose, the rabbit recovers entirely.

No. 346.—15–VI, 1k-710; injection of 10 cc. of the serum of rabbit No. 238. One hour later, injection of $\frac{3}{10}$ cc. of virulent blood of pneumoenteritis. 16–VI, 8 A.M., 41°; one o'clock in the afternoon 40° 7. 17–VI, 40°; 18–VI, 1k-550, 39° 7 at 4 P.M.; injection of 5 cc. of serum. 20–VI, 1k-115, another iniection of 5 cc. of serum. From this day the animal increases in weight, improves and continues to be well. Two witnesses, one of which had received serum of normal rabbits, died the 17th and the 18–VI.

One cow, with injections of the serum of vaccinated rabbit, immunized rabbits against an injection of virulent pneumoenteritis. This result confirms that of Mr. Metchnikoff.

C. *Comparative experiments of Serotherapy.*—It was interesting to know if the serum of rabbits vaccinated against *swine plague* would grant a certain degree of immunity against the virus of *hog cholera* and of pneumoenteritis. The following are experiments made in that direction.

No. 325.—30–VI, injection of 5 cc. of the serum of rabbit No. 107, vaccinated and tested against *swine plague*. 31–V, after 24 hours, injection of $\frac{1}{10}$ cc. of virulent blood of *hog cholera*. The witness dies in 18 hours. The 1–VI, great hyperæmia; the 2–VI, the rabbit shows a temperature of 42° at 8 A.M; the ear is drooping; second injection of serum at 6 P.M.; death at 7.30. The rabbit inoculated with the preventive serum resisted 30 hours longer than the fresh rabbit.

No. 307.—1k-440. Injection of $\frac{4}{5}$ cc. of the serum of rabbit No. 107, vaccinated against *swine plague;* testing inoculation of *hog cholera* after 5 hours. The rabbit has a large œdema, and dies 21 hours after the injection of the virus; the witness, which weighed 1k-715, dies 5 hours earlier. Here again, the action was evident, but the rabbit was too young.

No. 324.—30–V; injection of 4 cc. of the serum of rabbit No. 107, vaccinated against *swine plague*. 31–V, after 24 hours, injections of $\frac{3}{10}$ cc. of virulent blood of pneumoenteritis. The witness dies in 42 hours.

1–VI, 9.30 A.M., 41° 6; ear tumefied. 2–VI, 8.30 A.M., 40°5, injection of 2 cc. of serum; 3–VI, 39° 7; another injection of 1 cc. of serum; 4–VI, 40°6; injection of $\frac{1}{2}$ cc. of serum, and the 5–VI, last injection of 1 cc. The rabbit had in all 9 cc. of serum. He had been tested and treated with rabbit No. 326, which was protected with 8 cc. of the serum from the rabbit vaccinated against pneumoenteritis.

Guinea-pig No. 6.—17–VII. Subcutaneons injection of 2 cc. of the serum from rabbit No. 107 vaccinated against *swine plague*. 18–VII, injection of $\frac{3}{10}$ cc. of blood of pneumoenteritis. The witness dies in the night of the 19th to the 20th-

VII. The guinea-pig has fever the following days (40° 3 in the morning), with tumefaction at the point of inoculation; after a few days the abscess is more defined and the guinea pig continues to be well.

Guinea-pig No. 3.—12-VII, ten o'clock; subcutaneous injection of 2 cc. of the serum from rabbit No. 107 vaccinated against *swine plague*; another injection of 2 cc. the 14-VII. A quarter of an hour later injection of $\frac{3}{10}$ of virulent blood of pneumoenteritis, which kills the witness in 52 hours; the guinea-pig soon recovers.

This same serum of the rabbit vaccinated against *swine plague* has been injected in the dose of 2 cc. to another guinea-pig (No. 5), that afterwards I tested against *swine plague*, the animal died in 25 hours, only three hours after the witness.

These few experiments show that the serum of a rabbit vaccinated against *swine plague*, powerless to protect animals against that disease, immunizes rabbits and guinea-pigs against pneumoenteritis. Its preventive action against the virus of *hog cholera* is as evident as for that of *swine plague*.

These results confirm those obtained with vaccinated animals and support the conclusion mentioned previously.

GENERAL CONCLUSIONS.

1st. The diseases of swine, kwown as *swine plague* (Salmon), *hog cholera* (Salmon), and infectious pneumoenteritis, are due to one and the same virus. Though differing in some morphological characters, the three microbes have shown themselves analogous to the point of view of microbian products, of pathogenous properties, morbid symptoms and lesions in animals (rabbit, guinea-pigs, mice, pigeon.)

2d. The differences of virulency and of toxicity are only quantitative. One can admit that they have been produced by external influences, as those differences are not constant.

3. The vaccination of rabbits against the virulent microbe has been obtained with the sterilized blood and cultures; it lasts at least several months. Animals vaccinated against the most active virus are refractory to less virulent microbes, but the opposite does not take place; animals immunized against the less virulent microbe have succumbed to the injection of a stronger microbe, presenting, it is true, a far superior resistance to that of the witnesses. To generalize the method and obtain positive results, it is then indispensable to take the most virulent microbe as a starting point.

4th. Immunization is also possible with injections of the serum from vaccinated animals; in this case it is but short.

5th. Everything indicates that these results are applicable to swine, and in keeping up experiments upon this animal, one may hope to obtain a serum able to exert a preventive and efficacious therapeutic action.

PYÆMIA IN THE DOG.

By H. H. Dell.

A Paper read before the Montreal Veterinary Medical Association.

I have been guided in the selection of my subject for your consideration this evening by a desire to direct your attention to a disease but little referred to in our literature. I was quite unaware of the paucity of information in the text-books concerning pyæmia in the dog, until I began to consult the several libraries to which I have had access. Later on I will report in detail a case which came under my own observation and following an operation of the most trivial nature.

Pyæmia is a disease characterized by recurrent chills and intermittent fever, with the formation of abscesses in various parts of the body resulting from contamination of the blood by the bacteria of suppuration. The point from which the bacteria and their products are distributed is usually a suppurating wound. Thrombi frequently result, which degenerate and break down, the fragments being carried along in the blood-stream and thus convey the infection to organs far removed from the original seat of suppuration. The lymphatic system also may convey the infective material to distant organs. The disease is somewhat insidious in its nature, and for this reason frequently obtains a foothold upon the animal before it is suspected.

The symptoms which are presented are occasioned by the inflammatory processes and the metastases. Fever of an intermittent type accompanied by chills is seen in all cases. The other symptoms vary with the organs most affected, and when we bear in mind the many organs in which the metastases occur, we are not surprised at the complexity of the symptoms.

Both pyæmia and septicæmia usually have their origin in wounds, but cases are recorded where no wound has been discovered; these apparently idiopathic cases being designated as of spontaneous origin; but reasoning from analogy rather than our practical experience with the disease, I think the doctrine of spontaneity no more tenable in this particular disease than in others.

Pyæmia and septicæmia are, I think, the unsuspected cause of much of the mortality following surgical operations in veterinary practice. The unfavorable terminations are hastily concluded to be the result of causes other than the entrance into the animal economy of organisms whose potency in the causation of diseases is beyond doubt. Diagnoses are made, but how rarely are autopsies performed to verify the same. To introduce into our practice the conditions of asepsis and antisepsis obtained in our well-regulated human hospitals is obviously quite impossible.

But do we as practitioners always endeavor to apply as far as possible in our practice the doctrines of Lister?

Are we not frequently careless in this respect, and because we cannot easily attain perfect conditions, do we not satisfy ourselves with a minimum amount in that direction and then blindly attribute failure to anything rather than our own carelessness or neglect?

Our English text-books on the practice of medicine and surgery contain descriptions of pyæmia based for the most part on the experiments of Koch, and refer to the occurrence of the disease in horses, cattle and sheep, but, singularly enough, no cases are recorded of the disease in dogs.

Our cynological literature also treats but little of the disease. Woodruff Hill is the only one of the many writers I have consulted who refers to the disease. He advises strict cleanliness in the treatment of even small wounds, as "pyæmia and septicæmia may follow carelessness in this respect."

The French works I have had at my disposal give the matter very little notice. Rolle's "Pathologie Morbide" contains a good account of the disease, but makes no reference to

its occurrence in the canine, and more surprising is the fact that in the "Maladie des Chiens" (a French translation of Hertwig), I failed to find either pyæmia or septicæmia mentioned among the list of diseases to which the dog is liable.

In the *Deutche Zeitschrift fur Thiermedicin*, Vol. IX, page 92, pyæmia is mentioned as occurring in young dogs following omphalitis.

In the *Monatshrift fur Thierheilkunde*, Vol. IV, page 381, Frohner records a case of pyæmia in the bitch following an attack of endometritis.

Rabe, in the *Berliner Thierarztlische Wochenschrift* (1888, page 65), describes the formation of multiple abscesses due to an organism resembling actinomyces.

The case referred to in my opening remarks was that of an aged cocker spaniel dog, which was brought to the college hospital on October 4, with the history of having the end of his tail crushed by being run over by a street car. Amputation was performed at the articulation between the fifth and sixth coccygeal vertebræ. The animal continued in good health, but the local conditions not being satisfactory, it was decided to excise another vertebræ and leave a flap of skin to form the stump. This was done on October 12. The parts were washed before the operation with soap and water, followed by a 1 per cent. solution of carbolic acid. Hands and instruments were also subjected to similar antiseptic treatment. Excision being effected, the edges of the skin were brought into apposition by sutures, the wound dusted with iodoform and a bandage applied. The wound was dressed on October 14, and found to be healing by granulation at the upper part, while from the lower there was a very slight discharge of a serous nature.

On the 16th there was no evidence of a discharge, the entire wound appeared to be united sufficiently to remove the sutures. The first symptom of any indisposition that presented itself was anorexia on the morning of the 17th, and then the temperature was found to be 101° F.

A 9 P.M. the thermometer registered a temperature of 104°, pulse 80, and as the animal still refused food and appeared

to be very weak and depressed, beef tea and stimulants were administered. On the morning of the 18th the only change in the symptoms was such increased weakness that a fatal issue seemed very near. At 11 A.M. he was carried into the cynology clinic, where he expired before any physical examination could be made.

Dr. Mills, from the history, diagnosed pyæmia or septicæmia, which was verified later by post-mortem examination.

The autopsy was held nine hours after death, and revealed the following conditions: Serous cavities dry, intestines distended, serous coats showed reddened patches, but there were no signs of peritonitis.

Spleen.—Extending along the middle of the abdominal cavity it was greatly enlarged, congested, soft, with numerous large hæmorrhagic infarcts and minute abscess formations.

Kidneys.—Enlarged, capsule easily removed, surfaces smooth, pale and mottled with areas of congestion and hæmorrhages. On section showed great fatty degeneration, large, white necrotic infarcts, but no signs of multiple abscesses visible to the naked eye. Pelves and ureters injected.

Liver large, congested, fatty, firm, without the presence of abscesses. There were also several small superficial areas of necrosis.

The *intestines* contained much mucous, and a specimen of tænia 75 cm. in length. Otherwise no evidence of disease.

The *heart* was normal in size, containing a moderate amount of blood, blue-black in color, and also a small quantity of mixed clot. The muscle was firm, deep red in color, and free from abscesses. Aortic valves were chronically thickened at their attached margins, the right posterior valve had recent dark-colored vegetations upon it, while behind it was a small recent thrombus. The left posterior valve was greatly degenerated, its free margin showing much loss of substance and numerous vegetations. At the attached margin were two deep ulcerations involving the heart substance. There was also slight fusion of the valves.

Lungs.—The bronchi were slightly reddened, larger vessels free; otherwise no evidence of pulmonary disease. The brain was normal.

Tail.—Extremity presented small, sloughy aperture, without macroscopic evidence of thrombi.

The articulations showed no traces of abscess formation.

Microscopic examination of organs stained with methylene blue revealed the following results:

In the *spleen* numerous large hæmorrhages and very minute abscesses, and throughout small collections of cocci (apparently staphylococcus pyogenes), evidently of embolic origin.

Kidneys showed a similar condition and also advanced parenchymatous degeneration.

In the *liver* were hæmorrhages, old and recent, and areas of necrosis. Cells in the centre of the lobule showed early atrophy. No true abscesses were apparent, but cocci were present in arteries and veins, and invading the bile ducts.

The *heart* muscle showed cocci in the capillaries but no abscess formation.

Tail.—A section from the site of the wound showed considerable necrosis, small cell infiltration, together with granulation tissue. The veins themselves, so far as could be made out, did not show on being stained with methylene blue any trace of bacteria in their lumen. Loose thrombi, and some partially organized, are seen in the vessels, but further examination was rendered unsatisfactory owing to conditions under the tail, which had been preserved.

Conclusions and Pathological Diagnosis.—Death from *pyæmia* following the operation on the tail. Thrombo-phlebitis in the vessels. Acute ulcerative aortic endocarditis with metastatic abscesses in the kidney and spleen, parenchymatous nephritis, necrosis in the liver.

Interesting Features.—It is interesting to notice the virulence of the disease following so simple and trivial an operation. Further, the very few clinical symptoms are also not what would be expected in a disease making such rapid advances; while again, the freedom of the lungs and articulations from abscesses is one particular wherein the disease in this case did not follow the usual course as seen in other animals.

It affords me great pleasure to acknowledge the most valuable assistance rendered me by Drs. Adami and Martin, of the Pathological Laboratory, in the investigations of this case.

REPORTS OF CASES.

A CASE OF TETANUS CURED WITH ANTITOXIN.

By Geo. Jobson, V.S., Oil City, Pa.

The curative treatment by means of antitoxin, although as yet confined to a limited number of diseases, opens a field whose limits we cannot yet define, and many diseases which are now looked upon as fatal may in the near future be cured by this form of treatment. The discovery of tetanus anti toxin is one of the most recent and valuable additions to the list, and it is the only known remedy at present that can be relied upon to cure this generally fatal disease.

Before proceeding with a description of the case referred to, it will be well to give a brief outline of the cause of the disease, so that we may better understand the action of the remedy. Tetanus is a germ disease which attacks most all species of domestic animals, and man; and it is characterized by spasmodic convulsions of the muscles, which, before attacking the entire apparatus generally begins in a limited number; for instance, when the face muscles are affected and the jaws become locked, it is called "lockjaw." Later the entire apparatus is involved, and the body becomes rigid; a condition which is brought about by the entrance of germs into the system, and the formation of them by poisons, called toxins.

That tetanus occurs spontaneously has very few supporters at present, as it is necessary to have the presence of the toxin or poison before the disease is produced, and the germs which produce it may gain entrance to the system by the slightest kind of a wound.

The bacillus of tetanus is an anærobic germ, *i. e.*, one which cannot live in the presence of the atmosphere, the oxygen in it being the destructive agent. This rod-shaped germ is widely

diffused to all parts of the earth, and occurs in manure, rich garden earth, and in fact everywhere the air cannot penetrate. It is said that the presence of the germ has been revealed in the intestines of herbivora, and this may be an explanation of the cause of the so-called cases of idiopathic tetanus, the enemy gaining entrance by means of a wound in the intestinal wall. When the tissues are bruised and torn their vitality is lessened and a condition exists which is favorable to the growth of the bacillus of tetanus. But should the wound be sharply defined, the surrounding tissues uninjured, and the arterial blood flow freely, then unfavorable conditions exist for its growth, as the oxygen contained in the vital fluid tends to destroy the germs, and the migratory cells from the surrounding healthy tissues come forth to combat the enemy. When the bacilli find a medium suitable for their growth they form a poison called toxin, which is the agent that causes the symptomatic muscular contractions. The bacillus does not cause the tetanic convulsions except in an indirect manner, that is, by the production of the poison or toxin, which acts as an irritant to the system. If the system possesses sufficient vitality to resist the effects of the toxin for a length of time, a material called antitoxin is formed by it, which neutralizes the effects of the toxin. If then we supply the system with antitoxin we fortify it with the material it craves to combat the germ poison. So that by the use of prepared antitoxin we can supply the system in several days with a material it requires months to form, granted It can resist the action of the virulent poison of the germs so long.

The case about to be described is not cited simply because the animal recovered, as I have had several cases recover by medicinal treatment alone; but because the effects of the material were almost immediate, while by the old methods it required months sometimes to produce the same results.

CASE.—A chestnut pony gelding used in a grocery wagon received a wound in the neck from a rusty nail sticking out of a board in the stall. In about nine days afterwards the man in charge noticed a slight stiffness during locomotion, but it was not thought serious and the animal was kept at work

until the next day, when he was brought to the office, and a diagnosis of incipient tetanus was made, and it was advised to have the animal unhitched and removed to his stall.

Nerve sedatives and anti-spasmodics were given, but the animal grew steadily worse, and on November 3d it was a well marked case of tetanus. The muscles of the trunk and limbs were now stiff, but trismus had not as yet occurred, and with assistance the animal was able to rise when down.

Having read an article by Paul Gibier, M.D., Director of the New York Pasteur Institute, on the treatment of this disease in man by the use of antitoxin, and to whom I am indebted for some of the above statements, I suggested to the owner that we send to the institute for a sufficient quantity of antitoxin to give it a fair trial, if it did not cost too much, and he consented. Before the arrival of the antitoxin, on the morning of November 7th, the horse was found lying in the stall unable to rise. Slings were put under him and on being raised to his feet was unable to stand. The entire muscular system was stiff and the jaws locked. Respiration was rapid and conducted with much difficulty. The slightest disturbance would bring on spasms, and it looked doubtful if the horse would live any length of time.

On November 9th, a supply of antitoxin sufficient for three injections was received from the institute, and at 4:15 P. M., assisted by my father, the first injection was made. The hair being first shaved from portions of the neck, the parts were washed with a solution of carbolic acid, and the antitoxin in solution was injected hypodermically. Immediately before the injection the pulse was 44, temperature, 100⅗°F. and respiration 72. The wound was washed with iodine, 1; potassium iodide, 2; and water, 100 parts. When the second injection was given next morning, the respirations had dropped to 55, pulse 40, and the temperature had risen to 101⅗°F. Improvement in the condition of the muscles of the body and limbs were general, while the muscles of the jaws were decidedly improved. The neck being moved from side to side, instead of being held in a straight line as previously.

On November 11th the third injection was made and a

further improvement was visible; the respirations being 52, pulse 40, and temperature 100⅗°. The muscles of the jaws could be freely used in masticating. Improvement continued steadily until six days after when he was taken out of the slings and walked around the yard. Recovery is now complete and the horse is doing his regular work.

ANTITOXIN IN TETANUS.

By J. S. Lamkin, D.V.S., Yonkers, N. Y.

I received a request to write a report of my recent case of tetanus, but I was unable to do so at the time, as the animal was still suffering from the effects of the last injection as hereinafter described, and as I wanted to see him again I delayed writing, in the hope of being able to see you in person, in time for the January Review, but could not do so.

On October 28th I was called to see a bay horse suffering from tetanus. The symptoms were all well developed, head extended, breathing rapid, hind legs straddling, tail erect and quivering, and any quick movement or noise causing a spasm. He had been docked about six weeks previously, but the end of the tail had not healed, but was ulcerated and angry-looking. His jaws were not closely locked, and he would eat oats and bran and even a little hay if cut up and mixed with bran or meal. I advised antitoxin, or rather told the owner that it was, in my opinion, the only thing that offered any hope for the animal, and he said, "go ahead;" so I procured four bottles of the liquid antitoxin and gave full doses every six hours for four doses, then procured more and gave half-doses, afterwards lengthening the interval between them to night and morning. After the fourth dose there was some little improvement and I gave an aloes ball without very much trouble, the jaws having relaxed considerably. After using eight bottles, I had to take some of the dry antitoxin, as the liquid agent was exhausted, and in connection with it my first and only complication arose. I diluted a whole dose, using distilled water in the sterilized bottles obtained with the antitoxin, and injected one-half of it, leaving the remainder for evening;

but the animal appeared so much better then, that I put it off and did not give him that dose for two days, in the meantime going into the Pasteur Institute, and asking if it would be safe to use it after being diluted so long, and was told it would. So I injected it, and the next morning a swelling as large as a man's fist appeared very sore, and which had not gone *entirely* away when I saw the animal last, some two weeks ago. The first half-dose, injected immediately after being dissolved, caused no irritation, neither did the liquid agent; so I suppose that some poisonous change occurred during the two days of its being in solution. The animal was eating and feeling well when I saw him last, and I do not fear a relapse.

A second case, though, a few days ago had quite a different course and termination. This animal had also been docked about a month before, and the end of the tail was, like the other, very sore. He was more nervous, and the jaws were tightly locked. I commenced at once using the dry antitoxin, but as it seemed irritant, every injection causing a swelling the size of a hen's egg, I procured the liquid, which worked better in this respect, and used altogether seven bottles, but the animal did not respond to it, but, on the contrary, grew worse, and we had him destroyed.

I hope to hear from others using it.

MILK FEVER.

By Herbert S. Perley, V. S., St. Albans, Vt.

There is nothing very peculiar about this case except that it recovered, and it is merely given because it introduces a new treatment which I believe originated with Dr. Frank Miller, ot Burlington, Vermont.

On December 2d, I was called to attend a cow on the farm of the Franklin County Creamery Association. I found the animal, a five-year-old grade cow, heavy milker and feeder. She had dropped a healthy calf the day before, and had appeared well till that morning when she was seen to stagger and finally go down.

She was in a comatose condition when I saw her, with the head turned around to the side.

I gave her a grain and a half of eserine and put her onto stimulants every three hours. Applied moist heat to loins and covered her up in a pile of straw.

Injected two drachms of liquor strychnia every two hours; this is what I referred to as Dr. Miller's treatment, and the cow made a good recovery in fifty-six hours. I consider this a little unusual, as the animal was taken so soon after calving, viz., twelve hours. Whether to lay it to the strychnia or not I do not know, but shall certainly try it again.

A QUEER WINE CELLAR.

By Wm. Dougherty, D.V.S., Baltimore, Md.

While holding an autopsy a few days since, at one of our fertilizing factories, the man in charge gave me a German wine bottle, about sixteen inches high, that he had removed from a very small mule the day before. It was lodged in the small intestine. The bottle is now covered with intestine, and there is also some liquid in the bottle. I tried to trace the history of the case, and find, if possible, the manner in which the bottle got there.

The mule belonged to a foundry, and was taken with colic, and treated by the stable boss for two days, and then by a homeopathic veterinarian for about a week. Did not improve, and was sent to a veterinary hospital and remained there about two weeks.

Diagnosis, "calculus." While at hospital had been treated with pilocarpine and eserine for constipation; did not eat much, nor have any passage to speak of. Was returned to owner very much emaciated and covered with bed-sores.

The owner had him destroyed. I was unable to discover or find out in any way, how the bottle could possibly have gotten there.

GLANDERS AND MALLEIN.

By Dr. L. McLean, M.R.C.V.S., Brooklyn, N. Y.

Some time ago you were kind enough to supply me with a quantity of mallein; when you did so you imposed one con-

dition, i.e., that I would report to you, for publication, some of my experiences of an exceptional character, as to its value as a diagnostic agent in glanders. While there may be nothing very exceptional in the following case, it strongly confirms how reliable a factor it is in ferreting out the existence or non-existence of this disease in the equine race.

In a stable of eighty horses (of which I have professional charge), one morning early in last October my attention was called to a black six-year-old gelding in prime condition, with slight discharge from near nostril. Upon examination I found the same to be a confirmed case of glanders; the animal was immediately isolated and on the following morning destroyed. On the morning of the following Sunday I made a thorough examination of all the horses; found one black mare with a very slight discharge from near nostril and a perceptible enlargement of the sub-maxillary gland of the same side (neither indurated nor adherent.) The driver of the animal said that she had a periodic cough; in every other respect she seemed normal and in prime condition. On taking her temperature, I found the thermometer to register 103°. The animal was not known to have come in direct contact with the one already destroyed, as above referred to. This mare was at once isolated and a smart cathartic administered, which operated freely. On the third day her temperature was down to 101°, and the tumefaction of the gland almost entirely disappeared; but there was a perceptible fœtid odor from the near nostril and slight discharge. On Oct. 29th I subjected her to the mallein test, with the following results:

Inoculated the same at 4 P.M., the temperature then being $101\frac{1}{5}$; at 7 P.M., $102\frac{2}{5}$; at 8 P.M., 103 and at 10 P.M., $103\frac{2}{5}$. On the morning of the 30th, at six o'clock, $105\frac{2}{5}$; at 8 A.M., $104\frac{5}{8}$; at 12 M., 104; at 4 P.M., $103\frac{7}{8}$; at 8:30 P.M., 105 and at 10:15 P.M., 105. On the morning of the 31st, at six o'clock, 104; at 12 M., 104; at 4 P.M., 103; at 8 P.M., $103\frac{1}{4}$ and at 10 P.M., 103. November 1st, at 6 A.M., 103; at 4 P.M., 103; at 6 P.M., 103 and at 10 P.M., 103. November 2d, at 6 A.M., 101 and at 10 A. M., 101. November 3d, at 7 A.M., 101 and at 3 P.M., 101.

For the first two days the animal went slightly off her

feed and the seat of inoculation was tumefied and painful to the touch; so much so that she winced when putting forward the hand to manipulate the same.

Having full faith in mallein, the above was conclusive evidence to me that the animal was affected with glanders, and I so reported to the owner, but the mare being a favorite, and, to a casual observer, in a perfectly healthy condition, he was reluctant to consent to having her killed; the animal looking well, feeding well, but the temperature ranging from 101 to 101½.

On November 9th she was again inoculated, for the second time, with precisely the same results, which I reported to the owner, still he would not consent to her destruction and made the remark that to inject the same stuff below the skin of any animal, would bring about the same results. I there and then volunteered to put it to the test.

On the morning of the 14th the mare was for the third time inoculated. At the same time I inoculated one of my own horses. The reaction in the black mare, within 24 hours, registered up to 104, while in the case of my own horse, there was no deviation from the normal temperature, and although, at the seat of inoculation, there was slight tumefaction there was no heat, or pain on pressure. I submitted these facts to the owner, and requested him to draw his own conclusions. He at once expressed his satisfaction and consented to have the animal destroyed.

The post mortem, which was made at the American Veterinary College in the presence of the entire class, revealed the characteristic lesions of this disease, although in a very minute form, both in the air passages and the lymphatics of the pulmonary pleura, the lungs presenting numerous small glanderous deposits, the bronchial lymphatic glands being enlarged and infiltrated, while the septum nasi showed several small, hard tumors of glanderous nature.

Query: How many horses in New York and Brooklyn would defy the mallein test? Am I safe in saying that from 10 to 15 per cent. of the horses in both cities would react to this test.

ACUTE INDIGESTION IN A COLT.

By Dr. Moyle, Waterford, Wis.

On October 30, 1895, I was called to see a three-year-old colt showing all the symptoms of abdominal pain, frequently getting up and lying down, pulse 90 per minute, temperature 103°F., abdominal walls very much distended with gas, with prolapsus of the rectum.

Upon puncturing the cæcum with the trocar the gases, although mixed with fluid, were quickly eliminated, and gave the animal almost instant relief. I then replaced the protruding rectum, and would like to have given an enema of warm soapsuds, but being without my rectal pump was unable to do so. I then prescribed the following drench:

Aloes soc., pulv. zingib., spts. terebinth, tinct. opii., one oz.; hydrarg. sub-chloride, one drachm; aqua, half pint; to be given at once, and left two more doses of calomel to be given, one in two the other in four hours later. My reason for so doing was on account of the icterus condition of all the visible mucous membranes, and left orders to be called next morning if the colt showed symptoms of pain.

Next morning, being called, found colt in about the same condition as the previous night, again used the trocar with good result, the animal then receiving rectal injections, which were continued until six pails of warm soapsuds were used. I then gave a drench composed of tr. nucis. vom., spts. ether nit., one oz.; aqua, half pint. In about five hours the evacuations, which were at first colorless, became mixed with fæces, animal seemed to feel much better, drank a little water and began looking for something to eat. From this on he made a rapid recovery.

A CASE OF POISONING FROM BAD WATER.

By W. H. Derr, V.S., Mansfield, Ohio.

Was called to the farm of Thomas Burgett on the afternoon of the 4th of September to see a mare he said was slightly ailing. Found the patient, grey mare, about 1,200 pounds, five years old.

History.—Two or three days previous she was noticed to

be weak and easily fatigued. Day before, September 3d, she was noticed to pass black-colored urine. Appetite good up to noon of the 4th, with slight colicky pains.

On examination I found temperature 106⅖°, pulse 85, weak, breathing accelerated, membrane reddened, left lung congested and urine very black; ears and legs partially cold. I reserved my diagnosis, and prescribed slippery elm gruels. Also bel. lad. fl. ex., tinct. aconite and tinct. iron, to be given in gruel with sod. hyposulp. in drinking water. Prognosis grave, but the owner laughed at this, as he did not consider much wrong.

I called on the morning of the 5th and found my patient on the field ready for the grave. I held a post mortem and found all healthy except the lung (left), with the peritoneum darkened, and kidneys slightly congested. When through with the post mortem one of the farm hands told me to look at a big bay gelding (one that had helped haul out the mare), as he seems drowsy. I felt his pulse and found it all right; and he said he ate well.

That night, the 5th, I was again called to the farm and found the gelding in bad condition; with severe pains, urine, if anything, darker than mare's, circulation 70, temperature 104°. I then suspected something they were eating. I put him under same treatment as the mare, increasing the sod. hyposulp. I drew some of the urine and analyzed it, and found blood corpuscles in abundance, with some kind of spores. I do not know the name.

In the morning I found the patient worse in every way; no appetite, neither would he partake of water, temperature 105½°, pulse 90, breathing 40, severe abdominal pain, and frequent urination, membrane pale and of a dark hue. Six or eight weeks previous I had a bad case of purpura on the same farm, and I thought it might be a hidden case, but could see no symptoms whatever. I telegraphed for my father at Wooster, O., and consulted with him, and he agreed with me as to the diet or drinking water causing it. We continued the same treatment, with addition of spts. turpentine.

Next day I examined all the horses on the farm, some ten or twelve head, and found two affected with dark urine, other-

wise healthy, except a slight elevation in temperature. The water was low in the well where they got their water, and I examined it and found it very unhealthy, being loaded with organic matter. I placed them all on other water and none of the others were affected. The bay horse began to improve the fourth day and made a good recovery, but was very weak for some time, and last week was shipped to New York, being as fat and in good spirits as could be.

A COMPLICATED CASE.

By W. H. Derr, V.S., Mansfield, Ohio.

Was called on forenoon of the 10th of December to see a grey horse belonging to the mail department of the city. He had been ailing several days, but had entirely refused feed on the morning of the 10th. Found him with temperature 105,° pulse 80 and very weak, breathing 28, membranes injected. Right lung blocked to the upper third, legs swollen, ears and legs cold.

Diagnosis.—Influenza with pneumonia of the right lung. Being a short distance from the hospital I had him removed there and gave the usual treatment, with mustard to the side. Gave stimulants, and he brightened up and seemed better in the evening. About 8 o'clock he began pawing and became very restless, looking back to sides, but did not attempt to lie down.

I then gave him fl. ex. can. ind., half pint; fl. ex. bellad, one ounce, and he seemed relieved. He received the other treatment through the night. On the morning of the 11th, much worse, except appetite, which was improved. Temperature 107°, pulse 102 very weak, breathing 45, legs and body cold, had no pain, bowels not moving; gave him one and a half pints of raw oil and added half pint doses fl. ex. nux. vom., every four hours. In the evening, abdominal pain, continued pawing, no appetite, temperature and pulse same as morning. Placed in hot blankets from shoulders to flanks and hot water applied every fifteen minutes, all night.

Morning of the 12th, temperature 104½, pulse 80, breath-

ing 25, intervals of rest, but still in pain, lying down for two or three minutes at a time, no action of bowels; gave strychnine sulp., one-half gr. hypodermically, and repeated in the afternoon and again at 10 o'clock, with no relief. I also gave another quart of oil.

Morning of the 13th, condition worse, again repeated the blankets, but had no hopes of a recovery, although I did have if I could have opened the bowels. Gave strychnine sulph. one-half gr., and at noon gave him strychnine sulph., one gr.; eserine, one gr. in two ounces of water under the skin of the breast. He then got in very severe pain, but in forty-five minutes his bowels began to move, and he had eight or ten passages before night, but he also continued in severe pain; hot water blankets were again applied all night, and also plenty of gruels were given. Next morning he was better, but had laminitis, being very sore on all feet. Hair of mane and tail was loosened, but under the usual treatment he made a good recovery, and was to-day, December 18, dismissed with a good appetite and temperature normal, but pulse a little accelerated, feet all right, and no more hair falling out.

In reporting this case I wish to call attention to the strychnine and eserine, as I find good benefit from the combination. I know it was none of the best to use them in the case reported, but I wanted to move the bowels if possible, as I had no hope if I could not do so soon.

JABORANDI IN CEREBRITIS.

By FRANCIS ABELE, Quincy, Mass.

Some time ago I noticed an article in the REVIEW recommending fluid extract of jaborandi for cerebritis. Had used it on two cases just before, so was quite interested.

Number one was a big bay coal wagon horse used singly. Understand that when he was stuck, owner sometimes struck him over head. Found horse walking about yard listlessly, where he had been chased so as not to damage barn. Eyes were fixed, he would not back, would not turn, and would not lead unless whipped hard. Usually would not

stand whip. When let into stall would push into corner and bruise his face, at times would get delirious and strike at the front of box. Bled at mouth, gave cathartic, blistered poll after cold douches, and followed with fluid extract of jaborandi and potassium bromide, wet feed, and later nux vomica. For two or three days horse could not eat. On second day he would drink if pail was placed up high enough to get his mouth under water. We then gave hay tea and gruel. He recovered in about two weeks; went back to work. Had another violent attack about a month later, and was killed without veterinary assistance.

Number two was a fine bay mare used on a four-horse stone team. Found her lying down motionless. Got her up and she refused to be led or turned, eyes staring, would not eat or drink, could not even move her from middle of barn floor. Bled, gave enemata, blistered poll, later gave hay tea containing fluid extract of jaborandi and potassium bromide. Made a good recovery and is still at work.

FRACTURE OF THE TIBIA IN A PARROT.

By The Same.

I send the following, hoping that some may see in it a lesson of patience rewarded.

November 19th, I was called to a parrot that had been in one family twelve years and in another eight. Its age was uncertain. Cage had fallen onto it, making a complete fracture at proximal extremity of tibia. Leg hung limp. Bird dealers laughed at idea of setting it. Whittled out sole leathers in shape of a knee or heel, conforming to shape of hock flexed. Bandaged, covering same with silicate of potash and dusted whole with aloin before the silicate had set.

Polly tasted, and in its moist condition did not suit her palate. November 22d, three days later, bandage was loosened at the knee (flexure of hock) due to Polly tearing at it. Set it again. There was already slight union. December 2d, ten days from last setting, bandage was well off. This time I applied gutta-percha, which staid no longer, but before it was wholly off Polly could use that leg as well as the other.

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

By W. V. Bieser, D.V.S.

INFLUENCE OF THYROID EXTRACT INJECTIONS UPON NUTRITION AND OBESITY.

Charrin and Roger by subcutaneous injections of 0.5 to 0.75 gms. of thyroid extract cause a remarkable degree of emaciation in animals. In a patient with general obesity, the bodily weight diminished from 133 to 115 kgs. in three months through the agency of injection and internal administration of thyroid extract. The treatment with thyroid extract (1 gm. per diem) was more energetically resorted to.

Emaciation set in only when the extract was resorted to, not during the periods of stoppage of the injection. The daily weight diminished 50 to 80 gms. After a certain point was reached, it was discovered that further emaciation could not be induced. In a second patient similar results were obtained. In a third, weight was uninfluenced by the injections. The difference in the results undoubtedly depends upon the difference in the kinds of obesity, upon the fact that in certain cases the preparation used has not always an unvarying composition, and upon the difference in the length of time and the treatment used.—*Thierarzt. Woch.*

ANTISEPTIC AND COMPLETE IRRIGATION OF THE INTESTINAL TRACT.

Formerly the profession limited irrigation to the colon, not going beyond the valve of Baunhi. During the cholera epidemic in France, the small intestine was irrigated by means of a laparotomy and the insertion of a canula into the gut, through which the irrigation proceeded. Dauviac then tried to wash out the whole intestinal tract in a corpse by means of the rectum. He inserted an œsophageal tube into the rectum, connected this with an irrigator, and without

difficulty, injected 11 litres of water with a pressure of 80 cm. into the intestinal tract. The water flowed from the mouth. The experiment succeeded in animals. Some time afterward, the author treated a dog much emaciated as a result of a profuse diarrhœa. The whole intestinal tract was irrigated with a solution of lactic acid, 10 to 1000. The experiment succeeded, and 7 litres of the solution issued from the mouth.

The diarrhœa ceased. In the same way the author achieved success in uncontrollable diarrhœa of children, fœtid diarrhœa in typhus, of icterus catarrhalis, etc.

In a patient suffering from emaciation and diarrhœa without any assignable causes, the irrigation brought to light an entire tænia. All disturbances ceased with the aid of antiseptics, the whole intestinal tract being rendered sterile. To prevent regurgitation of fluid, from the intestine into the irrigator, the author has constructed a special apparatus. *Thierarzt. Woch.*

NEPHRORRHAPY IN A DOG.

The presence of calculi in the pelvis of the kidney necessitated until now in human surgery the total extirpation of the affected organ.

This extirpation is necessary where too large and too numerous calculi have caused too great a structural change in the kidney substance proper. Cases of calculi in the pelvis of the kidney can occur, in which the kidneys are unchanged *per se*, in which cases extirpation is distinctly contraindicated; here, instead of extirpating the kidney itself, you enter the pelvis of the organ to remove the calculi.

This incision into the pelvis, simple as it is, gives rise too often to very dangerous fistulæ; hence, cutting through the whole length of the kidney substance, into the pelvis, and removing the calculus by this route appeals to one's judgment. Further, there is less hæmorrhage than one would expect in such a vascular organ as the kidney. The first operation of this kind, was performed by Prof. Lorge in 1890, with the assistance of the author, who operated successfully upon other dogs since. The animal is chloroformed, the flank shaved and disinfected.

In the angle included between the posterior border of the last rib, and the transverse process of the first lumbar vertebræ, an incision is made through the skin, 7 to 10 cms. long according to the size of the animal.

The muscular layer is cut through, the peritoneum stripped away by the index finger, and the hand inserted between the peritoneum and the psoas muscles, without injuring the peritoneum—an extraperitoneal operation.

The kidneys are then grasped with the fingers, shelled out of their fatty capsule, and brought outside the wound. The kidney substance is then cut through and the pelvis irrigated, after the removal of the calculi ; at the same time, the ureter may be irrigated to remove minute calculi, by forcing them into the bladder, whence they can be passed by the natural process. To check the bleeding, the cut-halves are merely lightly placed in apposition. The kidney is then replaced and the external wound closed. R. neither sewed up the kidney nor washed the edges of the kidney wound.

Autopsy, a few months later, showed the operated kidney to be normal in size and a cicatrized line at the site of the former incision.—*Thierarzt. Woch.*

HÆMORRHAGIC SEPTICÆMIA IN AN OX.

This disease is insidious in its onset, and when least expected often disappears. A few hours after its onset, the animal becomes prostrated, covered with cold sweat, respiration and pulse accelerated, temperature varying from 38.80° to 40° C. There is a hollow note on percussing the chest and cough weak and infrequent. During the treacherous course of the disease, œdema of the lungs and of the glottis at the base of the tongue sets in. Lesions at autposy reminds one of pleuro-pneumonia. The lung tissue, instead of expanding under the influence of air inflations, is solid, inelastic and non-crepitating; the interlobular connective tissue is infiltrated with serum, fibrin and pus, and surrounds red or dark lobules of lung tissue.

These lesions, which have their site chiefly in the middle

of the lung, often attain the size of a man's head; if they approach the pleura or pericardium, pleuritis or pericarditis exudates and lesions are found. The subcutaneous connective tissue in the region of the neck is infiltrated with serum, also the mucous membranes of the mouth, œsophagus and larynx. Contents of the alimentary tract are often bloody; spleen normal; kidney tubules hæmorrhagic; uterus shows an œdematous swelling between the chorion and allantois coats.

The microscope reveals lesions of interstitial pneumonia and blood extravasation into the alveoli. The microbe cultivated in serum, milk and gelatin is inoculable in horses, pigs, guinea-pigs, rabbits, hens and doves.

Prof. G. includes this disease in the list of hæmorrhagic septicæmias. All curative efforts in checking the course of the disease were fruitless. Isolation, disinfection of infected stalls, killing of diseased animals, offer only a means of localizing or eradicating the scourge.—*Oest. Monatsch. fur Thier.*

SOCIETY MEETINGS.

CALIFORNIA VETERINARY MEDICAL ASSOCIATION.

The annual meeting of the California State Veterinary Medical Association was held in the lecture-rooms of the California Veterinary College, San Francisco, on December, 11th, 1895.

The meeting was called to order at 2 o'clock P.M., by the Secretary, Dr. R. A. Archibald, who stated that as the President and Vice-President were both unavoidably absent, it would be necessary to elect a President pro. tem.

Dr. H. A. Spencer, of San Jose, was unanimously chosen as President pro. tem.

The roll was called and the following members responded: Professors Skaife and Egan, Drs. Archibald, Spencer, Sr., Spencer, Jr., Pierce, Fabbi, Forrest, Maclay, Jackson, Hogarty and Williams. Visitors: Professors Steers and Cunningham and the students of the California Veterinary College.

Professor Skaife, Dean of the Faculty of the California Veterinary College, tendered the Association a hearty welcome.

Minutes of previous meeting were read and approved.

The Secretary stated that it would be in order for the chair to appoint a committee as provided for in a resolution adopted June 12th, 1895. By request said resolution was read.

Moved and seconded that the motion whereby said resolution was adopted be rescinded. Carried.

The subject matter of said resolution was taken up and considered, and several amendments proposed.

Moved and seconded that a committee of one be appointed by the chair to make the required amendments. Carried.

The chair appointed Dr. Maclay as such committee, who reported as follows:

Mr. President:—Your special committee appointed to make required changes in resolution introduced on June 12th, 1895, begs to report that all of said changes have been made, and the resolution herewith returned.

On motion, the report of the committee was received, and the secretary requested to read the resolution as amended.

Here follows the amended resolution:

Whereas, The live-stock interests of this State are suffering from the malignant influences of contagious and infectious diseases, and

Whereas, The health of the public is also jeopardized by the presence of said contagious and infectious diseases which affect the domestic animals, and

Whereas, We, the members of the California State Veterinary Medical Association, realize that this state of affairs is due to the fact that there are no laws on the statute books of this State sufficiently adequate to control the ravages of these contagious and infectious diseases. Therefore, be it

Resolved, That the presiding officer of this meeting be and is hereby authorized and requested to appoint a committee of three members of this Association, whose duty it shall be to wait on, or communicate with the Governor of this State with a view of prevailing upon him to appoint a commission, to consist of two veterinarians, one physician, one attorney and one dairyman or stockraiser, who shall receive no compensation, and whose duty it shall be to devise ways and means whereby the public health and the live-stock interests of this State may best be protected from the ravages of contagious and infectious animal diseases, such as anthrax, tuberculosis, glanders, hog cholera, etc.

Moved and seconded that the resolution, as amended, be adopted. Carried.

The chair appointed Drs. Maclay, Skaife and Archibald a committee, as provided for in the foregoing resolution.

The Secretary read his annual report for the year ending Dec. 1st, 1895. On motion the report was received and ordered filed.

The Treasurer being absent, the hearing of his annual statement was postponed until the next quarterly meeting of the Association.

An application for membership from Prof. Steers, of the California Veterinary College, was read and referred to the Board of Examiners, with the request that said application be acted upon before the end of the present convention.

The chair stated that before proceeding with the election of officers it would be necessary to nominate some gentleman for the office of President; further, that nominations for all other offices were still open.

Dr. Maclay nominated Prof. Skaife. On motion, nominations for the office of President were declared closed.

Dr. H. Lemke being in nomination for Vice-President, and no further names appearing, the nominations were declared closed.

Dr. D. F. Fox being in nomination for Secretary and no further names appearing, nominations were declared closed.

Dr. F. E. Pierce being in nomination for Treasurer and no further names appearing, nominations were declared closed.

Drs. Maclay, Egan, Spencer, Sr., McCullum and Graham, being in nomination to form the Board of Examiners and no further names appearing, nominations were declared closed.

Dr. Pierce moved that, as there was but one nomination for each office, the Secretary be directed to cast the ballot for said officers. So ordered.

The ballot having been cast, the President pro. tem. announced the officers for the ensuing year as follows:

President, Prof. Skaife, San Francisco; Vice-President, Dr. H. Lemke, Bakersfield; Secretary, Dr. D. F. Fox, Sacramento; Treasurer, Dr. F. E. Pierce, Oakland; Board of Examiners, Drs. Maclay, Egan, Spencer, Sr., McCullum and Graham.

The newly elected President, Prof. Skaife, thanked the members for the honor conferred, and asked President pro. tem. Spencer to continue as Chairman for the remainder of the session, which Dr. Spencer kindly consented to do.

The Secretary-elect, Dr. Fox, not being present, and Dr. Archibald having no desire to continue the duties as Secretary, Dr. Maclay was requested and consented to act as Secretary for the remainder of the session.

The subject matter of delinquencies for dues and assessments was then taken up and considered.

Dr. Egan moved that the Secretary be and is hereby instructed to notify all members of the amount of their arrearages; also to inform said members that if said amount is not paid on or before the second Wednesday of March, 1896, that their names be referred to the Board of Directors with instructions to said Board to enforce Sec. 2 of Article VIII of the By-laws, which states that any member two years in arrears for dues or assessments shall have his name dropped from the roll of membership. Carried. The chair so ordered.

A very interesting paper was then read by Dr. H. F. Spencer, of San Jose, on "Stomatitis Pustulosa Contagiosa." A lively discussion followed the reading of the paper.

At 4:30 o'clock P. M., Dr. Maclay moved that the Association take a recess until 7:30 P. M. Carried.

At 7:30 o'clock P. M., the Association reassembled, President pro. tem. Spencer in the chair. Professor Skaife read a very excellent paper on "Physiology." The subject was handled in a very masterly manner by the essayist, and evoked a warm discussion, after which Dr. R. A. Archibald read a very learned and interesting paper on "Contraction of the Foot." This paper was accompanied by a large number of crayon drawings of the horse's foot in health and disease; also drawings of the various kinds of shoes for the relief of contraction. The essayist demonstrated that he had given the subject matter a great amount of study. Its reading was followed by a very interesting discussion, the majority of the members present taking part.

Moved and seconded that the thanks of the Association

be tendered to our worthy ex-Secretary, Dr. R. A. Archibald, for the very able manner in which he conducted the duties of his office during the past four years. Carried.

Then the report from Board of Examiners was presented as follows:

"*Mr. President*:—Your Board of Examiners, to whom was referred the application of Professor Steers, with instructions to report on same at this session of the Association, beg to report that we have had the same under consideration and herewith return the said application with the recommendation that said Professor Steers be elected to membership. Thos. Maclay, President."

Moved that the report be adopted. Carried.

Moved that Professor Steers be and is hereby elected to membership in this Association, and that the Secretary be and is hereby instructed to inform the gentleman of his election. Carried.

Professor Skaife offered the following: Inasmuch as Professor Cunningham, F.C.S., a member of the Faculty of the California Veterinary College, takes a very deep interest in the welfare and progress of the veterinary profession, I move that he be elected an honorary member of this Association. Carried.

Professor Cunningham being present thanked the members for the honor, and concluded his remarks by stating that he desired to make investigations of "Azoturia," and to that end requested the members to furnish him with small quantities of the urine passed by animals suffering from the affection.

Moved and seconded that the thanks of the Association be tendered to Professor Skaife, Dr. R. A. Archibald, and Dr. H. F. Spencer, for the very learned and interesting papers which they have favored us with at this session; further, that said gentlemen be, and are hereby requested to furnish the Secretary with their respective papers or copies of the same, and that when so furnished he is hereby directed to forward them to the veterinary journals of America. Motion carried and request made.

Moved by Dr. Maclay, seconded by Dr. Forrest. In the

matter of election of Dr. Creely, of San Francisco to membership in this Association, that inasmuch as the said Creely was elected in opposition to my wishes and report on his name, and as I am of the opinion that he cannot abide by the Code of Ethics as set forth in the By-Laws of this Association, and as he is well aware of his election to membership in this Association, and having so far failed to subscribe to the By-Laws, and being delinquent for his initiation fee and dues, I move that the Secretary be and is hereby instructed to refuse acceptance of any and all moneys in payment of said initiation and dues from the said Creely, also to refuse the said Creely permission to sign the By-Laws of this Association, and not to issue a certificate of membership to him; further, that all action of this Association in electing said Creely a member of this Association be hereby rescinded. So ordered.

Moved that the thanks of this Association be, and is hereby tendered the Faculty of the California Veterinary College for the use of this lecture hall and other privileges extended to us during this session. Carried.

Professor Skaife responded by stating that the Faculty earnestly hoped the Association would hold their next meeting in the same place.

Mr. Welch, on behalf of himself and fellow students of the California Veterinary College, thanked the Association for the privilege granted them during the session.

President Skaife announced that Drs. Price, Egan, and Jackson would read papers at the next meeting.

Moved that when we do adjourn we do so to meet on the second Wednesday in March, 1896, at California Veterinary College, San Francisco. Carried.

The chair announced that on the following day (Thursday, December 12), at 10 o'clock A. M., a clinical entertainment would be held at the college, conducted by Dr. R. A. Archibald.

On motion the Association adjourned.

THOMAS MACLAY, *Secretary pro. tem.*

MISSOURI VALLEY VETERINARY ASSOCIATION.

About forty members of the profession and friends attended

the seventh regular meeting of this Association at Kansas City, Mo., December 13, 1895, when a most interesting programme was fully carried out.

President Stewart called the meeting to order at 7 P.M.

After the roll-call and reading of the minutes of the previous meeting were adopted, the papers were read and each one discussed separately.

Dr. Harrison's paper being a report of a post-mortem examination of a black-jack. Many specimens shown, that indicated the cause of death beyond a doubt.

Dr. G. T. Netherton treated on "Purpura Hæmorrhagica in the Bovine Species."

Dr. L. M. Kluttz, "Fractures Complex, with Miracles;" also a case of protrusion of the bowels as the result of injury.

Dr. Chas. Saunders, "Care of Mares in Foal."

Dr. L. R. Brady, "Canine Distemper."

Dr. S. Stewart, "Meat Inspection."

All the papers were excellent, and showed great care in preparation, and were fully discussed, bringing out many valuable points.

In all respects it was an excellent meeting, and certainly all were greatly benefited by being present.

It is fully demonstrated that no one can afford to miss any meeting of the Missouri Valley Veterinary Association, and the interest is constantly iucreasing. The next regular meeting will be held in Kansas City, in February, 1896.

S. L. HUNTER, Secretary.

ONTARIO VETERINARY ASSOCIATION.

This Association, which is composed of duly qualified veterinary surgeons practicing in Canada and the United States, held its annual meeting in the Veterinary College, Toronto, on Dec. 21st.

Mr. G. L. Robson, V.S., the President, opened the meeting with a most excellent address, containing many points of interest and much food for thought.

After the usual routine business, the reading of the minutes

of the last meeting, secretary and registrar's reports, communications, etc., a discussion ensued, relating to the Act recently passed in the Provincial Legislature respecting veterinary surgeons, and a fine having been imposed under that act upon a person for falsely claiming the title, which fine should have been paid over to the funds of this Association.

The following new members were then duly elected: W. J. Morgan, V.S., F. G. Hutton, V.S., and J. Wagner, V.S.

Prof. S. Sisson, of the Ontario Veterinary College, read an excellent paper on "Undescended Testicle in the Horse."

In the discussion that followed, Mr. Quinn, V.S., who has had much experience in the castration of cryptorchids, warmly complimented Mr. Sisson on the excellence of his anatomical desciption of the condition existing.

Mr. A. Crowforth, V.S., read a very interesting paper on "Toxin and Antitoxin," in relation to the cause, cure, prevention and diagnosis of disease.

It was resolved that the Secretary be instructed to get new copies of the register printed, and to have incorporated in the pamphlet the act respecting veterinary surgeons recently passed, for distribution to members of the Association.

The following are the officers for the ensuing year: Prof. A. Smith, F.R.C.V.S., Honorary President; Mr. H. Hopkins, V.S., President; Major Lloyd, 1st Vice-President; Mr. S. Sisson, V.S., 2d Vice-President; Mr. Sweetapple, V.S., Secretary; Mr. W. Cowan, V.S., Treasurer. Directors: Messrs. J. Wende, W. J. Wilson, W. J. Morgan, J. F. Quinn, W. Steele, W. Gibb, A. Crowforth and W. Burns. Auditors: Messrs. C. Elliott and J. D. O'Neil. Delegates to the Western Fair Association: Messrs. J. H. Wilson and J. D. O'Neil. Delegates to the Industrial Exhibition Association, Toronto: Prof. A. Smith and Mr. H. Hopkins. Mr. N. Cowan was nominated to represent the Association at the Central Farmer's Institute, but he explained that it would be better for the veterinary surgeons practicing in the various localities to be placed on the lecturing staff.

THE MASSACHUSETTS VETERINARY ASSOCIATION.

A meeting of this association was held at 19 Boylston Place, Boston, on Wednesday evening 22d ult., when an interesting paper was read by Dr. Jno. M. Parker, President of the association, on "Milk as a Factor in the Propagation of Disease." A full account will be published in the March REVIEW.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The Montreal Veterinary Medical Association met in the library of the Faculty of Comparative Medicine and Veterinary Science, on Thursday evening, November 7, with the President, Dr. M. C. Baker in the chair. Drs. McEachran, Adami, Mills, and Martin were also present.

The minutes of the last meeting were read and approved. The Secretary was then instructed to convey the thanks of the members to Dr. F. H. Osgood, Chairman of the Massachusetts State Board of Cattle Commissioners, for the donation of fifty copies of the Report of the Board for 1895.

Dr. D. McEachran reported the addition to the library of Moller's Surgery, and also Vol. II. of Fleming's Surgery.

Mr. Thurston reported a case of obstruction in the thoracic portion of the œsophagus of a dog, due to the presence of a bone, with symptoms of gastro-intestinal irritation; the animal dying shortly after admission to the hospital.

The post mortem revealed an ulcerative condition and a perforation through the œsophageal tissues into the aorta, death being due to hæmorrhage into the stomach through this aperture. Dr. McEachran and Dr. Mills reported some similar cases from their own experiences.

Mr. Harri H. Dell presented a carefully prepared paper on "Pyæmia in the Dog,"* and illustrated his remarks by microscopic and macroscopic specimens from a case which recently came under his observation. In the discussion following, Dr. Adami congratulated the essayist on his contribution to our literature on the subject. He also referred to the experiments

* Published elsewhere in this number of the REVIEW.

of Councilman, which demonstrated the fact that pus can be produced by caustic substances without the intervention of pyogenic organisms.

Dr. McEachran gave some further remarks on the history of the disease, and instanced the occurrence of empyæma in a cow following mammitis.

Dr. Mills referred to the literary and scientific merit of the essay, and reported the occurrence of the disease in his own kennel.

Dr. Martin followed with very interesting remarks on the pathology of pyæma and septicæmia.

The essayists for the next meeting were then appointed, and the meeting adjourned.

HARRI H. DELL, *Sec. Treas.*

STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

The State Board of Veterinary Medical Examiners, of Pennsylvania, was convened at Harrisburg at 12 M., on November 13, in accordance with a call issued by the Secretary of the Commonwealth. The Board being duly sworn into office by the Department of State, Dr. W. Horace Hoskins was made temporary chairman, and Dr. S. J. J. Harger secretary pro tem. All the members of the Board were present.

The first order of business being election of permanent officers, Dr. S. J. J. Harger was nominated for President by Dr. Harry Walters, and Dr. W. Horace Hoskins for Secretary by Dr. J. C. McNeil. No other names being placed, the election was made by acclamation, upon which the officers assumed their respective places.

The question of adopting suitable by-laws for the government of the Board was taken up for consideration, and after considerable discussion on the subject, a motion was made that the chair appoint a committee of three to prepare suitable rules to be submitted to the entire Board for adoption at the next meeting, and that they also draft a suitable form of license to be presented at the same time.

The Secretary was instructed on motion to procure a minute-book and a suitable registration book.

Deputy Secretary Burnett was then asked to inform the

Board as to the intent of the act so far as placing on the seal of the State, and the Board was informed that all licenses would have to be returned to the Department of State at Harrisburg to receive there the seal of the Commonwealth.

It was also suggested to the Committee on Rules and By-Laws that the officers be elected annually. It was also decided that two regular meetings be held each year in the latter part of April and June, with such other meetings as the business of the Board might demand.

The subjects for examination were assigned as follows: Anatomy, Veterinary Diagnosis and Zootechnics, Dr. S. J. J. Harger; Practice of Medicine, Dr. W. Horace Hoskins; Obstetrics, Meat and Milk Inspection and Sanitary Medicine, Dr. J. W. Sallade; Surgery and Physiology, Dr. Harry Walters; Pathology, Chemistry, Materia Medica and Therapeutics, Dr. J. C. McNeil. The age of the applicants, their normal character and genuineness of their diplomas, were placed in the hands of the Secretary.

It was also decided that a list of fifteen questions on each branch would be submitted to the applicants, from which they should select ten for answering. Applicant shall draw one from a box of cards with numbers upon them, upon which he shall write his name and place the same in a sealed envelope, and shall designate his answers to the questions on the various subjects by the same number. This card shall be placed in the keeping of the Secretary. It was decided that a general average of 65 per cent. shall have been attained, and that a minimum of 50 per cent. must be attained on each branch.

It was moved and seconded that the April meeting shall convene for two days. It was decided that the first regular meeting of the Board for examination of applicants for license shall convene on the third Monday in December at the office of the Secretary, 3452 Ludlow Street, Phildelphia, Pa., and that notices of the same be sent to the veterinary journals of North America.

The Chairman then appointed the following Committee on Rules and By-Laws: Dr. W. Horace Hoskins, Chairman; Dr. J. W. Sallade and Dr. Harry Walters, after which a motion to adjourn prevailed. W. HORACE HOSKINS, *Secretary.*

ONTARIO VETERINARY COLLEGE.

This institution held its Christmas examinations on Dec. 20th. The usual Board of Examiners, which is composed of practicing veterinary surgeons, officiated. The following gentlemen, after being subjected to a rigid examination, were awarded graduation diplomas:

Donald Currie, Stayner; Francis Duncan, Unionville; John M. Farquhar, Greenock, Scotland; Truman Farl Gore, Clarksburgh, W. Va., U. S.; Cecil Howell, London, Ont.; John S. Jones, Poland, N. Y.; R. L. Kann, Lisburn, Pa.; Archie A. McArthur, Stayner; Allan McDonald, Erin; Angus McDonald, Teeswater; John J. McGregor, Carleton Place; Arthur E. Miller, Myersville, Ohio; James H. Powers, Providence, R. I.; David D. Reed, Teeswater; William J. Rouse, Mitchell Square; Daniel Henry Super, Warrensville, Pa.; Jacob W. Wagner, Tavistock; E. C. Wisman, Bryan, Ohio.

Primary Examination, Anatomy.—Geo. Hamilton Leslie.

BIBLIOGRAPHY.

PATHOLOGIE INTERNE DES ANIMAUX DOMESTIQUES—(Internal Pathology of Domestic Animals.)—By C. Cadeac, professor at the Veterinary School of Lyons. 1. *Diseases of the Digestive Apparatus*. The first of sixteen volumes, with 478 pages and 16 plates. This volume is part of the *Veterinary Encyclopedia*.

A work of the internal pathology of the domestic animals was much wanted, and after ten years of careful gathering of important material, Mr. Cadeac made of the whole minute selections, which form the basis of his new work. Convinced adept of the microbian theory, he inspired himself of the work of Pasteur and of his students in the arrangement and adaptation of the material he had collected.

He studies the diseases by apparatus; each organ forming a chapter, each containing a series of articles which cover the history of all the ailments that this organ may be subject to. The order of classification adopted for all the diseases is the anatomical order.

This volume treats of the DIGESTIVE APPARATUS. In the first chapter the *mouth* is treated (stomatitis, glossitis, paralysis of the tongue). The second considers the *parotid gland*

(parotiditis, calculi, fistula, etc.) The third studies the *maxillary* and the *lingulal* salivary glands. The *pharynx* covers the fourth chapter. The fifth occupies the *guttural pouches*. In the sixth we find œsophagitis, dilatation, structure, obliteration, rupture, etc., as diseases met with in the *œsophagus*, though a special chapter is given to jabot. The three following chapters are considering the diseases of the three first compartments of the stomach of ruminants (rumen, reticulum, omasum). The eleventh chapter treats of *stomach* (gastritis, ulceration, dilatation, laceration, twisting, indigestion, etc.)

This first part forms a very important addition to the series of the so neatly published encyclopedia of the house J. B. Bailliere & fils, 19 rue Hautefeuille, Paris.

THE DOG, IN HEALTH AND IN DISEASE.—By Wesley Mills, M.A., MD., D.V.S., etc. Second edition, revised and enlarged. D. Appleton & Co., New York.

The number of editions a book is published does not always indicate its value, but this thought cannot apply to this second edition of *Dog, in Health and in Disease*. It is but a few years since we were able to welcome the first edition, and it is with pleasure that we welcome the second—so well said to be revised and enlarged, and with an increase in the illustrations, colored plates, wood cuts, etc.

The general plan adopted by the author in the original book has been kept up in this, and before considering abnormal or diseased condition, a general opportunity to study dogs in their normal state is given. The additions made in the book will be found advantageous; the glossary of terms in common use by dog fanciers will prove useful.

Altogether, it is quite certain that Dr. Mills will find that this edition will receive, at the hands of the profession, as kind reception as the first.

THE VETERINARIANS' CALL-BOOK (Perpetual): A visiting list, which can be commenced at any time and used until full, containing much useful information for the student and busy practitioner. By Roscoe R. Bell, D.V.S., Professor of Materia Medica, Therapeutics and Hygiene in the American Veterinary College, New York.

After a dormant period of eight months, in which this useful little book has been entangled in the affairs of the de-

funct publishing house of Sabiston, Murray & Co., it emerges in a much improved condition, having been secured by W. R. Jenkins, 48th Street and 6th Avenue, New York, who is prepared to fill all orders for it. The inquiry for it during the past fall and summer guarantees for it a large popularity in its improved form.

ARCHIVES DES SCIENCES BIOLOGIQUES—(Archives of Biological Sciences). Imperial Institute, St. Petersburg.

The first part of Vol. IV has been received, and it contains several articles of unusual interest, such as "the use of parachlorophenol as curative agent in local tuberculous affections," upon "the sensibility of animals to the toxine of glanders, "etc.

At the beginning the *Archives* were published in Russian and in French in one number. Now this issue is made double, one in each language. It is one of the best and of the finest scientific publications of Continental Europe.

COMTES RENDUS DES TRAVAUX DE L'EOLE VITIRINAIZE DE KHARKOW—(Russia.) (Record of the Exercises of the Veterinary School of Kharkow), for the years 1891 to 1894.

A volume of some six hundred pages, with illustrations, relating many of the investigations and experiments, made by the staff of the school of Kharkow.

SANITARY FACTS.

TUBERCULOSIS IN COLORADO.—The subject of the presence of this disease in Colorado, its nature, contagiousness, dangers to human life and the live-stock interest of the State has given rise to considerable discussion. Dr. C. Denison and Dr. Gresswell, State Veterinarians, have published interesting interviews, in the daily papers of Denver, on this important question.

HOG CHOLERA IN IOWA.—The State Board of Health Bulletin for December reports hog cholera as most prevalent in many parts of the State.

SANITARY MEASURES IN TENNESSEE.—In the Bulletin of

the State Board of Health is published an address before the Farmers' Convention, by Prof. M. L. Copelin, M.D., where, after considering some of the diseases contagious to men and animals, he says, "to whom are you to look for this protection. To such men, having special training, must be entrusted the sanitary protection of herds, and upon you devolves the duty of support, both moral and financial." A proper recognition of the veterinarian's calling.

CORRESPONDENCE.

PRACTICE OF VETERINARY MEDICINE IN MARYLAND.

BALTIMORE, Dec. 13, 1895.

Editor American Veterinary Review:

DEAR SIR:—Judge Dennis, of Superior Court, has decided the law protecting veterinary practice in Maryland to be constitutional in the case of State vs. J. C. Sigmund. Dr. Sigmund holds a diploma issued since Jannary 1st, 1895, by a two-year school. As the minimum fine is $100, a stet was entered by the prosecuting attorney, upon agreement of all concerned, after the decision of the court favorable to the Board had been recorded. This was done upon recommendation of the Board, as it was not desired to impose a penalty in this, a test case.

Yours truly,

A. W. CLEMENT, Sec.

UNITED STATES VETRINARY MEDICAL ASSOCIATION.

PHILADEDPHIA, JAN. 4th, 1896.

Editor American Veterinary Review:

DEAR SIR:—Thinking that you would be desirous of having the following information for publication in your columns in connection with the U. S. V. M. A., I take pleasure in submitting it to you for approval.

The following named members of the Association have accepted places on the Comitia Minora for the ensuing year: W. L. Williams, Chairman; Leonard Pearson, Nelson P. Hinkley, Thos. B. Rayner, T. J. Turner, D. E. Salmon and L. H. Howard.

The following gentlemen have accepted positions as Assistant State Secretaries: Arizona, D. LeMay; Arkansas, R. R. Dinwiddie; Kansas, N. S. Mayo; Massachusetts, Madison Bunker; Minnesota, M. H. Reynolds; Montana, W. L. Williams; Missouri, J. M. Phillips; North Dakota, T. D. Hinebauch; Pennsylvania, W. L. Rhoads; Tennessee, J. W. Schiebler.

The Army Legislative Committee as follows: J. P. Turner, Chairman; Jno. R. Hart and F. H. Mackie.

The other Committees are in process of completion and notice will be sent you in due time.

Vote has been taken upon the place of meeting for 1896, Buffalo and Nashville asking for this recognition, and Buffalo has won; therefore, the meeting goes to New York State in September, 1896, and will convene for three days, namely, the 1st, 2d and 3d.

Very truly yours,

W. HORACE HOSKINS, *President.*

PERSONAL.

WE are credibly informed that Prof. R. S. Huidekoper, the talented editor of the *Journal of Comparative Medicine*, professor of anatomy at the New York College of Veterinary Surgeons, and President of the New York County Veterinary Medical Association, has in contemplation a removal from the present scenes of his activity to the Old Dominion, where he is to assume the directorship of a large breeding establishment.

JOHN DORIS, Jr., D.V.S., graduate of Ohio Veterinary College, has resigned his position as Veterinary Inspector, Bureau of Animal Industry, United States Department of Agriculture.

Prof. LEONARD PEARSON, of the Veterinary Department of the University of Pennsylvania, has received the appointment of State Veterinarian of Pennsylvania.

OBITUARY.

The death of Dr. W. W. Custer, of Reading, Pa., is announced as having taken place on Dec. 1st, 1895.

REVIEWS WANTED.

Any one having double copy of the August number, '95, will oblige the Editor by sending the same to the office of the REVIEW.

NEWS AND ITEMS.

QUALIFICATIONS OF VETERINARIANS.—A somewhat peculiar case has just been decided by the supreme court of Michigan, which will be of much interest to such owners of horses as have been victimized by quacks, who professed to have the necessary skill to treat intelligently diseases of the horse. The facts in the case briefly stated, are these: The plaintiff was called in to treat the defendant's horse, which, however, received no benefit from the treatment, and when the bill for services, amounting to three dollars and fifty cents, was rendered the defendant refused to pay it. The alleged veterinarian then entered suit in justice court, and, after the jury had disagreed in the first trial of the case, secured a verdict in the second. From this verdict the defendant appealed to the circuit court, in which two trials were also had, the second resulting in favor of the defendant. The plaintiff, whose name is Conkey, then appealed the case to the supreme court, and the opinion handed down in the case is well worth perusal by those whose business necessitates the periodical resort to veterinary skill. Without doubt the carrying of a suit in which the sum of three dollars and fifty cents only was at issue from the justice court to the circuit court, and from there to the supreme court, was an expensive proceeding to the parties involved, but outsiders may profit richly by it without cost to themselves. The opinion of the supreme court is lengthy and well digested, and sustains the circuit judge in the following postulate: "The plaintiff, by

holding himself out as a veterinary surgeon, contracted to be possessed of the necessary skill and learning, and it devolved upon him to show, by a preponderance of the evidence, that he had acquired and possessed the necessary skill and learning to practice intelligently and usefully the profession to which he claims to belong." The court goes on to state that the well defined principle of law, "a physician or dentist undertakes in law to supplement his reasonable care and honest endeavors with ordinary professional skill," applies as well to the veterinary surgeon, and that there is no presumption of qualification. The plaintiff in the case in point admitted he had never studied veterinary medicine except once during a period of six months when he was incarcerated in the State penitentiary at Ionia. "We are not aware," concludes the opinion, "that it is a part of the punishment inflicted on the convicts in that institution to study veterinary medicine, nor that a library is furnished them for that purpose. The plaintiff's education and experience were peculiarly within his own knowledge. It was incumbent on him to prove them, not upon the defendant to disprove them. His further testimony that he had been engaged in the business of a veterinary surgeon for sixteen years did not, it would seem, establish his qualification. When a professional man sues for services it is necessary for him to prove his qualifications by showing his admission to practice under the statute, his graduation from some reputable college or school, or his study and experience if his right to practice is not otherwise regulated. If the plaintiff was simply a quack, without education or experience, and was employed by the defendant upon the representation that he was a qualified veterinary surgeon he could not recover." This is the first decision on this specific point of which *The Horseman* has knowledge, and that it should have been rendered in a suit involving only the paltry sum of three dollars and fifty cents is practically inexplicable. The fact, however, remains that the supreme court of Michigan has held in good set terms that a quack can not recover for worthless services rendered. The effect of the decision is even more far-reaching. If a quack can not recover for services that do not result favorably he can not recover for services that may tend toward the saving of a valuable horse's life. In short, under this decision no owner of horses who is imposed on by a quack veterinarian need pay him a cent, and in the case of a suit being brought it will be necessary for the quack to prove his claims to being considered a veterinary surgeon in the true meaning of that term.—*The Chicago Horseman.*